**[MS-PPT]:**

**PowerPoint (.ppt) Binary File Format**

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**Revision Summary**

| Date | Revision History | Revision Class | Comments |
| --- | --- | --- | --- |
| 6/27/2008 | 1.0 | New | First release |
| 8/15/2008 | 1.01 | Minor | Revised and edited the technical content |
| 1/16/2009 | 1.02 | Minor | Updated the Intellectual Property Rights Notice |
| 7/13/2009 | 1.03 | Major | Changes made for template compliance |
| 8/28/2009 | 1.04 | Editorial | Revised and edited the technical content |
| 11/6/2009 | 1.05 | Editorial | Revised and edited the technical content |
| 2/19/2010 | 2.0 | Minor | Updated the technical content |
| 3/31/2010 | 2.01 | Editorial | Revised and edited the technical content |
| 4/30/2010 | 2.02 | Editorial | Revised and edited the technical content |
| 6/7/2010 | 2.03 | Editorial | Revised and edited the technical content |
| 6/29/2010 | 2.04 | Editorial | Changed language and formatting in the technical content. |
| 7/23/2010 | 2.05 | Major | Significantly changed the technical content. |
| 9/27/2010 | 2.05 | None | No changes to the meaning, language, or formatting of the technical content. |
| 11/15/2010 | 2.05 | None | No changes to the meaning, language, or formatting of the technical content. |
| 12/17/2010 | 2.05 | None | No changes to the meaning, language, or formatting of the technical content. |
| 3/18/2011 | 2.05 | None | No changes to the meaning, language, or formatting of the technical content. |
| 6/10/2011 | 2.05 | None | No changes to the meaning, language, or formatting of the technical content. |
| 1/20/2012 | 3.0 | Major | Significantly changed the technical content. |
| 4/11/2012 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/16/2012 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 10/8/2012 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 2/11/2013 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/30/2013 | 3.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 11/18/2013 | 3.1 | Minor | Clarified the meaning of the technical content. |
| 2/10/2014 | 3.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 4/30/2014 | 3.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/31/2014 | 3.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 10/30/2014 | 3.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 3/16/2015 | 4.0 | Major | Significantly changed the technical content. |
| 9/4/2015 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/15/2016 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 9/22/2016 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 6/20/2017 | 4.1 | Minor | Clarified the meaning of the technical content. |
| 9/19/2017 | 4.2 | Minor | Clarified the meaning of the technical content. |
| 12/12/2017 | 4.3 | Minor | Clarified the meaning of the technical content. |
| 4/27/2018 | 5.0 | Major | Significantly changed the technical content. |
| 8/28/2018 | 6.0 | Major | Significantly changed the technical content. |
| 2/16/2021 | 6.1 | Minor | Clarified the meaning of the technical content. |
| 4/22/2021 | 7.0 | Major | Significantly changed the technical content. |

Table of Contents

[1 Introduction 16](#_Toc69878580)

[1.1 Glossary 16](#_Toc69878581)

[1.2 References 21](#_Toc69878582)

[1.2.1 Normative References 21](#_Toc69878583)

[1.2.2 Informative References 22](#_Toc69878584)

[1.3 Overview 23](#_Toc69878585)

[1.3.1 Presentation Document 23](#_Toc69878586)

[1.3.2 Slides 23](#_Toc69878587)

[1.3.3 Shapes 23](#_Toc69878588)

[1.3.4 Placeholders Shapes 23](#_Toc69878589)

[1.3.5 External Objects 23](#_Toc69878590)

[1.3.6 Animation 24](#_Toc69878591)

[1.3.6.1 Timeline 24](#_Toc69878592)

[1.3.6.2 Conditional Properties 24](#_Toc69878593)

[1.3.6.3 Behaviors 24](#_Toc69878594)

[1.3.6.4 Builds 25](#_Toc69878595)

[1.3.7 Slide show 26](#_Toc69878596)

[1.3.7.1 Named Show 26](#_Toc69878597)

[1.3.7.2 Slide Transitions 26](#_Toc69878598)

[1.3.8 Byte Ordering 27](#_Toc69878599)

[1.4 Relationship to Protocols and Other Structures 27](#_Toc69878600)

[1.5 Applicability Statement 28](#_Toc69878601)

[1.6 Versioning and Localization 28](#_Toc69878602)

[1.7 Vendor-Extensible Fields 28](#_Toc69878603)

[2 Structures 29](#_Toc69878604)

[2.1 File Streams and Storages 29](#_Toc69878605)

[2.1.1 Current User Stream 29](#_Toc69878606)

[2.1.2 PowerPoint Document Stream 29](#_Toc69878607)

[2.1.3 Pictures Stream 33](#_Toc69878608)

[2.1.4 Summary Information Stream 33](#_Toc69878609)

[2.1.5 Document Summary Information Stream 33](#_Toc69878610)

[2.1.6 Encrypted Summary Information Stream 33](#_Toc69878611)

[2.1.7 Digital Signature Storage 33](#_Toc69878612)

[2.1.8 Custom XML Data Storage 33](#_Toc69878613)

[2.1.9 Signatures Stream 34](#_Toc69878614)

[2.2 Basic Types 34](#_Toc69878615)

[2.2.1 BlipRef 34](#_Toc69878616)

[2.2.2 bool1 34](#_Toc69878617)

[2.2.3 BulletSize 34](#_Toc69878618)

[2.2.4 char2 34](#_Toc69878619)

[2.2.5 ExHyperlinkId 34](#_Toc69878620)

[2.2.6 ExHyperlinkIdRef 35](#_Toc69878621)

[2.2.7 ExObjId 35](#_Toc69878622)

[2.2.8 ExObjIdRef 35](#_Toc69878623)

[2.2.9 FileOrDirNameFragment 35](#_Toc69878624)

[2.2.10 FontIndexRef 35](#_Toc69878625)

[2.2.11 FontIndexRef10 35](#_Toc69878626)

[2.2.12 HttpUrl 35](#_Toc69878627)

[2.2.13 IndentLevel 35](#_Toc69878628)

[2.2.14 MachineName 36](#_Toc69878629)

[2.2.15 MarginOrIndent 36](#_Toc69878630)

[2.2.16 MasterId 36](#_Toc69878631)

[2.2.17 MasterIdRef 36](#_Toc69878632)

[2.2.18 NotesId 36](#_Toc69878633)

[2.2.19 NotesIdRef 36](#_Toc69878634)

[2.2.20 ParaSpacing 36](#_Toc69878635)

[2.2.21 PersistIdRef 37](#_Toc69878636)

[2.2.22 PrintableAnsiString 37](#_Toc69878637)

[2.2.23 PrintableUnicodeString 37](#_Toc69878638)

[2.2.24 SlideId 37](#_Toc69878639)

[2.2.25 SlideIdRef 38](#_Toc69878640)

[2.2.26 SmartTagIndex 38](#_Toc69878641)

[2.2.27 SoundIdRef 38](#_Toc69878642)

[2.2.28 TabCrLfPrintableUnicodeString 38](#_Toc69878643)

[2.2.29 TabSize 38](#_Toc69878644)

[2.2.30 TextPosition 38](#_Toc69878645)

[2.2.31 TxLCID 39](#_Toc69878646)

[2.2.32 UncOrLocalPath 39](#_Toc69878647)

[2.2.33 UncPath 39](#_Toc69878648)

[2.2.34 UncPathOrHttpUrl 39](#_Toc69878649)

[2.2.35 UnicodeString 39](#_Toc69878650)

[2.2.36 Utf8UnicodeString 39](#_Toc69878651)

[2.3 File Structure Types 40](#_Toc69878652)

[2.3.1 RecordHeader 40](#_Toc69878653)

[2.3.2 CurrentUserAtom 40](#_Toc69878654)

[2.3.3 UserEditAtom 42](#_Toc69878655)

[2.3.4 PersistDirectoryAtom 43](#_Toc69878656)

[2.3.5 PersistDirectoryEntry 44](#_Toc69878657)

[2.3.6 PersistOffsetEntry 44](#_Toc69878658)

[2.3.7 CryptSession10Container 45](#_Toc69878659)

[2.4 Document Types 46](#_Toc69878660)

[2.4.1 DocumentContainer 46](#_Toc69878661)

[2.4.2 DocumentAtom 49](#_Toc69878662)

[2.4.3 DrawingGroupContainer 51](#_Toc69878663)

[2.4.4 DocInfoListContainer 52](#_Toc69878664)

[2.4.5 DocInfoListSubContainerOrAtom 52](#_Toc69878665)

[2.4.6 PresAdvisorFlags9Atom 53](#_Toc69878666)

[2.4.7 ModifyPasswordAtom 54](#_Toc69878667)

[2.4.8 FilterPrivacyFlags10Atom 55](#_Toc69878668)

[2.4.9 PhotoAlbumInfo10Atom 55](#_Toc69878669)

[2.4.10 VBAInfoContainer 56](#_Toc69878670)

[2.4.11 VBAInfoAtom 57](#_Toc69878671)

[2.4.12 PrintOptionsAtom 58](#_Toc69878672)

[2.4.13 EndDocumentAtom 58](#_Toc69878673)

[2.4.14 Slide List Types 59](#_Toc69878674)

[2.4.14.1 MasterListWithTextContainer 59](#_Toc69878675)

[2.4.14.2 MasterPersistAtom 60](#_Toc69878676)

[2.4.14.3 SlideListWithTextContainer 60](#_Toc69878677)

[2.4.14.4 SlideListWithTextSubContainerOrAtom 61](#_Toc69878678)

[2.4.14.5 SlidePersistAtom 62](#_Toc69878679)

[2.4.14.6 NotesListWithTextContainer 63](#_Toc69878680)

[2.4.14.7 NotesPersistAtom 64](#_Toc69878681)

[2.4.15 Header/Footer Types 65](#_Toc69878682)

[2.4.15.1 SlideHeadersFootersContainer 65](#_Toc69878683)

[2.4.15.2 HeadersFootersAtom 66](#_Toc69878684)

[2.4.15.3 UserDateAtom 66](#_Toc69878685)

[2.4.15.4 HeaderAtom 67](#_Toc69878686)

[2.4.15.5 FooterAtom 68](#_Toc69878687)

[2.4.15.6 NotesHeadersFootersContainer 68](#_Toc69878688)

[2.4.16 Sound Types 69](#_Toc69878689)

[2.4.16.1 SoundCollectionContainer 69](#_Toc69878690)

[2.4.16.2 SoundCollectionAtom 70](#_Toc69878691)

[2.4.16.3 SoundContainer 71](#_Toc69878692)

[2.4.16.4 SoundNameAtom 72](#_Toc69878693)

[2.4.16.5 SoundExtensionAtom 72](#_Toc69878694)

[2.4.16.6 SoundIdAtom 73](#_Toc69878695)

[2.4.16.7 SoundBuiltinIdAtom 74](#_Toc69878696)

[2.4.17 Broadcast Types 75](#_Toc69878697)

[2.4.17.1 BroadcastDocInfo9Container 75](#_Toc69878698)

[2.4.17.2 BCTitleAtom 78](#_Toc69878699)

[2.4.17.3 BCDescriptionAtom 79](#_Toc69878700)

[2.4.17.4 BCSpeakerAtom 79](#_Toc69878701)

[2.4.17.5 BCContactAtom 80](#_Toc69878702)

[2.4.17.6 BCRexServerNameAtom 81](#_Toc69878703)

[2.4.17.7 BCEmailAddressAtom 81](#_Toc69878704)

[2.4.17.8 BCEmailNameAtom 82](#_Toc69878705)

[2.4.17.9 BCChatUrlAtom 83](#_Toc69878706)

[2.4.17.10 BCArchiveDirAtom 83](#_Toc69878707)

[2.4.17.11 BCNetShowFilesBaseDirAtom 84](#_Toc69878708)

[2.4.17.12 BCNetShowFilesDirAtom 85](#_Toc69878709)

[2.4.17.13 BCNetShowServerNameAtom 85](#_Toc69878710)

[2.4.17.14 BCPptFilesBaseDirAtom 86](#_Toc69878711)

[2.4.17.15 BCPptFilesDirAtom 87](#_Toc69878712)

[2.4.17.16 BCPptFilesBaseUrlAtom 87](#_Toc69878713)

[2.4.17.17 BCUserNameAtom 88](#_Toc69878714)

[2.4.17.18 BCBroadcastDateTimeAtom 89](#_Toc69878715)

[2.4.17.19 BCPresentationNameAtom 89](#_Toc69878716)

[2.4.17.20 BCAsdFileNameAtom 90](#_Toc69878717)

[2.4.17.21 BCEntryIDAtom 91](#_Toc69878718)

[2.4.17.22 BroadcastDocInfoAtom 91](#_Toc69878719)

[2.4.18 HTML Publish Types 93](#_Toc69878720)

[2.4.18.1 HTMLDocInfo9Atom 93](#_Toc69878721)

[2.4.18.2 HTMLPublishInfo9Container 94](#_Toc69878722)

[2.4.18.3 FileNameAtom 95](#_Toc69878723)

[2.4.18.4 NamedShowAtom 96](#_Toc69878724)

[2.4.18.5 HTMLPublishInfoAtom 96](#_Toc69878725)

[2.4.19 Comment Author Types 97](#_Toc69878726)

[2.4.19.1 CommentIndex10Container 97](#_Toc69878727)

[2.4.19.2 AuthorNameAtom 98](#_Toc69878728)

[2.4.19.3 CommentIndex10Atom 99](#_Toc69878729)

[2.4.20 Document Comparison Types 99](#_Toc69878730)

[2.4.20.1 DocToolbarStates10Atom 99](#_Toc69878731)

[2.4.20.2 SlideListTable10Container 100](#_Toc69878732)

[2.4.20.3 SlideListTableSize10Atom 101](#_Toc69878733)

[2.4.20.4 SlideListEntry10Atom 101](#_Toc69878734)

[2.4.20.5 DiffTree10Container 102](#_Toc69878735)

[2.4.20.6 ReviewerNameAtom 103](#_Toc69878736)

[2.4.20.7 DiffRecordHeaders 104](#_Toc69878737)

[2.4.20.8 DocDiff10Container 105](#_Toc69878738)

[2.4.20.9 HeaderFooterDiffContainer 107](#_Toc69878739)

[2.4.20.10 NamedShowListDiffContainer 107](#_Toc69878740)

[2.4.20.11 NamedShowDiffContainer 108](#_Toc69878741)

[2.4.20.12 SlideListDiffContainer 109](#_Toc69878742)

[2.4.20.13 MasterListDiffContainer 110](#_Toc69878743)

[2.4.20.14 MasterListDiff10ChildContainer 111](#_Toc69878744)

[2.4.20.15 MainMasterDiffContainer 111](#_Toc69878745)

[2.4.20.16 SlideDiffContainer 112](#_Toc69878746)

[2.4.20.17 ShapeListDiffContainer 115](#_Toc69878747)

[2.4.20.18 ShapeDiffContainer 115](#_Toc69878748)

[2.4.20.19 TextDiffContainer 118](#_Toc69878749)

[2.4.20.20 RecolorInfoDiffContainer 119](#_Toc69878750)

[2.4.20.21 ExternalObjectDiffContainer 120](#_Toc69878751)

[2.4.20.22 InteractiveInfoDiffContainer 121](#_Toc69878752)

[2.4.20.23 TableListDiffContainer 121](#_Toc69878753)

[2.4.20.24 TableDiffContainer 122](#_Toc69878754)

[2.4.20.25 SlideShowDiffContainer 123](#_Toc69878755)

[2.4.20.26 NotesDiffContainer 124](#_Toc69878756)

[2.4.21 View Info Types 125](#_Toc69878757)

[2.4.21.1 GridSpacing10Atom 125](#_Toc69878758)

[2.4.21.2 NormalViewSetInfoContainer 125](#_Toc69878759)

[2.4.21.3 NormalViewSetInfoAtom 126](#_Toc69878760)

[2.4.21.4 NotesTextViewInfoContainer 128](#_Toc69878761)

[2.4.21.5 ZoomViewInfoAtom 128](#_Toc69878762)

[2.4.21.6 OutlineViewInfoContainer 130](#_Toc69878763)

[2.4.21.7 NoZoomViewInfoAtom 130](#_Toc69878764)

[2.4.21.8 SlideViewInfoInstance 132](#_Toc69878765)

[2.4.21.9 SlideViewInfoContainer 132](#_Toc69878766)

[2.4.21.10 SlideViewInfoAtom 133](#_Toc69878767)

[2.4.21.11 GuideAtom 133](#_Toc69878768)

[2.4.21.12 NotesViewInfoContainer 134](#_Toc69878769)

[2.4.21.13 SorterViewInfoContainer 135](#_Toc69878770)

[2.4.22 Summary Info Types 136](#_Toc69878771)

[2.4.22.1 CopyrightAtom 136](#_Toc69878772)

[2.4.22.2 KeywordsAtom 136](#_Toc69878773)

[2.4.22.3 SummaryContainer 137](#_Toc69878774)

[2.4.22.4 BookmarkCollectionContainer 138](#_Toc69878775)

[2.4.22.5 BookmarkSeedAtom 138](#_Toc69878776)

[2.4.22.6 BookmarkEntityAtomContainer 139](#_Toc69878777)

[2.4.22.7 BookmarkEntityAtom 140](#_Toc69878778)

[2.4.22.8 BookmarkValueAtom 141](#_Toc69878779)

[2.4.23 Document Tag Info Types 141](#_Toc69878780)

[2.4.23.1 DocProgTagsContainer 141](#_Toc69878781)

[2.4.23.2 DocProgTagsSubContainerOrAtom 142](#_Toc69878782)

[2.4.23.3 DocProgBinaryTagContainer 142](#_Toc69878783)

[2.4.23.4 DocProgBinaryTagSubContainerOrAtom 143](#_Toc69878784)

[2.4.23.5 PP9DocBinaryTagExtension 143](#_Toc69878785)

[2.4.23.6 PP10DocBinaryTagExtension 146](#_Toc69878786)

[2.4.23.7 PP11DocBinaryTagExtension 149](#_Toc69878787)

[2.4.23.8 PP12DocBinaryTagExtension 150](#_Toc69878788)

[2.5 Slide Types 151](#_Toc69878789)

[2.5.1 SlideContainer 151](#_Toc69878790)

[2.5.2 RoundTripSlideRecord 153](#_Toc69878791)

[2.5.3 MainMasterContainer 153](#_Toc69878792)

[2.5.4 RoundTripMainMasterRecord 156](#_Toc69878793)

[2.5.5 MasterOrSlideContainer 156](#_Toc69878794)

[2.5.6 NotesContainer 157](#_Toc69878795)

[2.5.7 NotesRoundTripAtom 158](#_Toc69878796)

[2.5.8 HandoutContainer 158](#_Toc69878797)

[2.5.9 HandoutRoundTripAtom 159](#_Toc69878798)

[2.5.10 SlideAtom 160](#_Toc69878799)

[2.5.11 SlideFlags 165](#_Toc69878800)

[2.5.12 NotesAtom 165](#_Toc69878801)

[2.5.13 DrawingContainer 166](#_Toc69878802)

[2.5.14 SlideSchemeColorSchemeAtom 167](#_Toc69878803)

[2.5.15 SchemeListElementColorSchemeAtom 167](#_Toc69878804)

[2.5.16 PerSlideHeadersFootersContainer 168](#_Toc69878805)

[2.5.17 SlideNameAtom 169](#_Toc69878806)

[2.5.18 TemplateNameAtom 169](#_Toc69878807)

[2.5.19 SlideProgTagsContainer 170](#_Toc69878808)

[2.5.20 SlideProgTagsSubContainerOrAtom 171](#_Toc69878809)

[2.5.21 SlideProgBinaryTagContainer 171](#_Toc69878810)

[2.5.22 SlideProgBinaryTagSubContainerOrAtom 171](#_Toc69878811)

[2.5.23 PP9SlideBinaryTagExtension 172](#_Toc69878812)

[2.5.24 PP10SlideBinaryTagExtension 173](#_Toc69878813)

[2.5.25 Comment10Container 175](#_Toc69878814)

[2.5.26 Comment10AuthorAtom 176](#_Toc69878815)

[2.5.27 Comment10TextAtom 177](#_Toc69878816)

[2.5.28 Comment10AuthorInitialAtom 177](#_Toc69878817)

[2.5.29 Comment10Atom 178](#_Toc69878818)

[2.5.30 SlideFlags10Atom 179](#_Toc69878819)

[2.5.31 SlideTime10Atom 179](#_Toc69878820)

[2.5.32 LinkedSlide10Atom 180](#_Toc69878821)

[2.5.33 LinkedShape10Atom 182](#_Toc69878822)

[2.5.34 PP12SlideBinaryTagExtension 183](#_Toc69878823)

[2.6 Slide Show Types 184](#_Toc69878824)

[2.6.1 SlideShowDocInfoAtom 184](#_Toc69878825)

[2.6.2 NamedShowsContainer 185](#_Toc69878826)

[2.6.3 NamedShowContainer 186](#_Toc69878827)

[2.6.4 NamedShowNameAtom 186](#_Toc69878828)

[2.6.5 NamedShowSlidesAtom 187](#_Toc69878829)

[2.6.6 SlideShowSlideInfoAtom 188](#_Toc69878830)

[2.6.7 InteractiveInfoInstance 195](#_Toc69878831)

[2.6.8 MouseClickInteractiveInfoContainer 195](#_Toc69878832)

[2.6.9 MouseOverInteractiveInfoContainer 196](#_Toc69878833)

[2.6.10 InteractiveInfoAtom 196](#_Toc69878834)

[2.6.11 MacroNameAtom 197](#_Toc69878835)

[2.7 Shape Types 198](#_Toc69878836)

[2.7.1 OfficeArtClientAnchor 198](#_Toc69878837)

[2.7.2 OfficeArtClientAnchorData 199](#_Toc69878838)

[2.7.3 OfficeArtClientData 199](#_Toc69878839)

[2.7.4 ShapeClientRoundtripDataSubContainerOrAtom 201](#_Toc69878840)

[2.7.5 ShapeFlagsAtom 201](#_Toc69878841)

[2.7.6 ShapeFlags10Atom 202](#_Toc69878842)

[2.7.7 ExObjRefAtom 202](#_Toc69878843)

[2.7.8 PlaceholderAtom 203](#_Toc69878844)

[2.7.9 RecolorInfoAtom 205](#_Toc69878845)

[2.7.10 RecolorEntry 207](#_Toc69878846)

[2.7.11 RecolorEntryVariant 208](#_Toc69878847)

[2.7.12 RecolorEntryColor 208](#_Toc69878848)

[2.7.13 RecolorEntryBrush 208](#_Toc69878849)

[2.7.14 ShapeProgTagsContainer 210](#_Toc69878850)

[2.7.15 ShapeProgTagsSubContainerOrAtom 210](#_Toc69878851)

[2.7.16 ShapeProgBinaryTagContainer 210](#_Toc69878852)

[2.7.17 ShapeProgBinaryTagSubContainerOrAtom 211](#_Toc69878853)

[2.7.18 PP9ShapeBinaryTagExtension 211](#_Toc69878854)

[2.7.19 PP10ShapeBinaryTagExtension 212](#_Toc69878855)

[2.7.20 PP11ShapeBinaryTagExtension 213](#_Toc69878856)

[2.8 Animation Types 214](#_Toc69878857)

[2.8.1 AnimationInfoContainer 214](#_Toc69878858)

[2.8.2 AnimationInfoAtom 215](#_Toc69878859)

[2.8.3 HashCode10Atom 224](#_Toc69878860)

[2.8.4 BuildListContainer 226](#_Toc69878861)

[2.8.5 BuildListSubContainer 226](#_Toc69878862)

[2.8.6 ParaBuildContainer 227](#_Toc69878863)

[2.8.7 BuildAtom 228](#_Toc69878864)

[2.8.8 ParaBuildAtom 228](#_Toc69878865)

[2.8.9 ParaBuildLevel 230](#_Toc69878866)

[2.8.10 LevelInfoAtom 230](#_Toc69878867)

[2.8.11 ChartBuildContainer 231](#_Toc69878868)

[2.8.12 ChartBuildAtom 232](#_Toc69878869)

[2.8.13 DiagramBuildContainer 233](#_Toc69878870)

[2.8.14 DiagramBuildAtom 233](#_Toc69878871)

[2.8.15 ExtTimeNodeContainer 234](#_Toc69878872)

[2.8.16 SubEffectContainer 238](#_Toc69878873)

[2.8.17 TimeNodeAtom 240](#_Toc69878874)

[2.8.18 TimePropertyList4TimeNodeContainer 241](#_Toc69878875)

[2.8.19 TimeVariant4TimeNode 242](#_Toc69878876)

[2.8.20 TimeDisplayType 243](#_Toc69878877)

[2.8.21 TimeMasterRelType 244](#_Toc69878878)

[2.8.22 TimeSubType 245](#_Toc69878879)

[2.8.23 TimeEffectID 246](#_Toc69878880)

[2.8.24 TimeEffectType 259](#_Toc69878881)

[2.8.25 TimeNodeTimeFilter 260](#_Toc69878882)

[2.8.26 TimeEventFilter 261](#_Toc69878883)

[2.8.27 TimeGroupID 261](#_Toc69878884)

[2.8.28 TimeEffectNodeType 262](#_Toc69878885)

[2.8.29 TimeAnimateBehaviorContainer 263](#_Toc69878886)

[2.8.30 TimeAnimateBehaviorAtom 265](#_Toc69878887)

[2.8.31 TimeAnimationValueListContainer 267](#_Toc69878888)

[2.8.32 TimeAnimationValueListEntry 267](#_Toc69878889)

[2.8.33 TimeAnimationValueAtom 270](#_Toc69878890)

[2.8.34 TimeBehaviorContainer 271](#_Toc69878891)

[2.8.35 TimeBehaviorAtom 272](#_Toc69878892)

[2.8.36 TimeStringListContainer 273](#_Toc69878893)

[2.8.37 TimePropertyList4TimeBehavior 274](#_Toc69878894)

[2.8.38 TimeVariant4Behavior 275](#_Toc69878895)

[2.8.39 TimeColorModel 276](#_Toc69878896)

[2.8.40 TimeColorDirection 277](#_Toc69878897)

[2.8.41 TimeOverride 277](#_Toc69878898)

[2.8.42 TimeRuntimeContext 278](#_Toc69878899)

[2.8.43 TimePointsTypes 279](#_Toc69878900)

[2.8.44 ClientVisualElementContainer 280](#_Toc69878901)

[2.8.45 VisualElementAtom 281](#_Toc69878902)

[2.8.46 VisualPageAtom 281](#_Toc69878903)

[2.8.47 VisualShapeOrSoundAtom 282](#_Toc69878904)

[2.8.48 VisualSoundAtom 282](#_Toc69878905)

[2.8.49 VisualShapeAtom 283](#_Toc69878906)

[2.8.50 VisualShapeChartElementAtom 283](#_Toc69878907)

[2.8.51 VisualShapeGeneralAtom 284](#_Toc69878908)

[2.8.52 TimeColorBehaviorContainer 285](#_Toc69878909)

[2.8.53 TimeColorBehaviorAtom 286](#_Toc69878910)

[2.8.54 TimeColorBehaviorPropertyUsedFlag 287](#_Toc69878911)

[2.8.55 TimeAnimateColorBy 287](#_Toc69878912)

[2.8.56 RGBColorBy 288](#_Toc69878913)

[2.8.57 HSLColorBy 288](#_Toc69878914)

[2.8.58 TimeAnimateColor 289](#_Toc69878915)

[2.8.59 RGBColor 289](#_Toc69878916)

[2.8.60 IndexSchemeColor 290](#_Toc69878917)

[2.8.61 TimeEffectBehaviorContainer 290](#_Toc69878918)

[2.8.62 TimeEffectBehaviorAtom 295](#_Toc69878919)

[2.8.63 TimeMotionBehaviorContainer 296](#_Toc69878920)

[2.8.64 TimeMotionBehaviorAtom 298](#_Toc69878921)

[2.8.65 TimeRotationBehaviorContainer 300](#_Toc69878922)

[2.8.66 TimeRotationBehaviorAtom 300](#_Toc69878923)

[2.8.67 TimeScaleBehaviorContainer 302](#_Toc69878924)

[2.8.68 TimeScaleBehaviorAtom 302](#_Toc69878925)

[2.8.69 TimeSetBehaviorContainer 304](#_Toc69878926)

[2.8.70 TimeSetBehaviorAtom 327](#_Toc69878927)

[2.8.71 TimeCommandBehaviorContainer 328](#_Toc69878928)

[2.8.72 TimeCommandBehaviorAtom 330](#_Toc69878929)

[2.8.73 TimeIterateDataAtom 330](#_Toc69878930)

[2.8.74 TimeSequenceDataAtom 332](#_Toc69878931)

[2.8.75 TimeConditionContainer 334](#_Toc69878932)

[2.8.76 TimeConditionAtom 335](#_Toc69878933)

[2.8.77 TimeModifierAtom 336](#_Toc69878934)

[2.8.78 TimeVariant 336](#_Toc69878935)

[2.8.79 TimeVariantBool 337](#_Toc69878936)

[2.8.80 TimeVariantInt 337](#_Toc69878937)

[2.8.81 TimeVariantFloat 338](#_Toc69878938)

[2.8.82 TimeVariantString 339](#_Toc69878939)

[2.9 Text Types 339](#_Toc69878940)

[2.9.1 DocumentTextInfoContainer 339](#_Toc69878941)

[2.9.2 KinsokuContainer 341](#_Toc69878942)

[2.9.3 KinsokuAtom 342](#_Toc69878943)

[2.9.4 KinsokuLeadingAtom 342](#_Toc69878944)

[2.9.5 KinsokuFollowingAtom 343](#_Toc69878945)

[2.9.6 Kinsoku9Container 343](#_Toc69878946)

[2.9.7 Kinsoku9Atom 344](#_Toc69878947)

[2.9.8 FontCollectionContainer 346](#_Toc69878948)

[2.9.9 FontCollectionEntry 346](#_Toc69878949)

[2.9.10 FontEntityAtom 347](#_Toc69878950)

[2.9.11 FontCollection10Container 348](#_Toc69878951)

[2.9.12 FontEmbedFlags10Atom 349](#_Toc69878952)

[2.9.13 TextCFExceptionAtom 349](#_Toc69878953)

[2.9.14 TextCFException 350](#_Toc69878954)

[2.9.15 CFMasks 351](#_Toc69878955)

[2.9.16 CFStyle 352](#_Toc69878956)

[2.9.17 TextCFException9 353](#_Toc69878957)

[2.9.18 TextCFException10 354](#_Toc69878958)

[2.9.19 TextPFExceptionAtom 355](#_Toc69878959)

[2.9.20 TextPFException 355](#_Toc69878960)

[2.9.21 PFMasks 357](#_Toc69878961)

[2.9.22 BulletFlags 358](#_Toc69878962)

[2.9.23 TabStops 359](#_Toc69878963)

[2.9.24 TabStop 359](#_Toc69878964)

[2.9.25 PFWrapFlags 360](#_Toc69878965)

[2.9.26 TextPFException9 360](#_Toc69878966)

[2.9.27 TextAutoNumberScheme 361](#_Toc69878967)

[2.9.28 DefaultRulerAtom 362](#_Toc69878968)

[2.9.29 TextRulerAtom 362](#_Toc69878969)

[2.9.30 TextRuler 363](#_Toc69878970)

[2.9.31 TextSIExceptionAtom 365](#_Toc69878971)

[2.9.32 TextSIException 365](#_Toc69878972)

[2.9.33 SpellingFlags 367](#_Toc69878973)

[2.9.34 SmartTags 367](#_Toc69878974)

[2.9.35 TextMasterStyleAtom 367](#_Toc69878975)

[2.9.36 TextMasterStyleLevel 369](#_Toc69878976)

[2.9.37 TextMasterStyle9Atom 369](#_Toc69878977)

[2.9.38 TextMasterStyle9Level 370](#_Toc69878978)

[2.9.39 TextMasterStyle10Atom 371](#_Toc69878979)

[2.9.40 TextMasterStyle10Level 372](#_Toc69878980)

[2.9.41 TextHeaderAtom 372](#_Toc69878981)

[2.9.42 TextCharsAtom 374](#_Toc69878982)

[2.9.43 TextBytesAtom 374](#_Toc69878983)

[2.9.44 StyleTextPropAtom 375](#_Toc69878984)

[2.9.45 TextPFRun 376](#_Toc69878985)

[2.9.46 TextCFRun 377](#_Toc69878986)

[2.9.47 SlideNumberMCAtom 377](#_Toc69878987)

[2.9.48 HeaderMCAtom 378](#_Toc69878988)

[2.9.49 FooterMCAtom 378](#_Toc69878989)

[2.9.50 DateTimeMCAtom 379](#_Toc69878990)

[2.9.51 GenericDateMCAtom 386](#_Toc69878991)

[2.9.52 RTFDateTimeMCAtom 386](#_Toc69878992)

[2.9.53 TextBookmarkAtom 387](#_Toc69878993)

[2.9.54 TextSpecialInfoAtom 388](#_Toc69878994)

[2.9.55 TextSIRun 388](#_Toc69878995)

[2.9.56 TextInteractiveInfoInstance 389](#_Toc69878996)

[2.9.57 MouseClickTextInteractiveInfoAtom 389](#_Toc69878997)

[2.9.58 MouseOverTextInteractiveInfoAtom 390](#_Toc69878998)

[2.9.59 TextRange 390](#_Toc69878999)

[2.9.60 OutlineTextProps9Container 391](#_Toc69879000)

[2.9.61 OutlineTextProps9Entry 392](#_Toc69879001)

[2.9.62 OutlineTextPropsHeaderExAtom 392](#_Toc69879002)

[2.9.63 OutlineTextProps10Container 393](#_Toc69879003)

[2.9.64 OutlineTextProps10Entry 393](#_Toc69879004)

[2.9.65 OutlineTextProps11Container 394](#_Toc69879005)

[2.9.66 OutlineTextProps11Entry 394](#_Toc69879006)

[2.9.67 StyleTextProp9Atom 395](#_Toc69879007)

[2.9.68 StyleTextProp9 396](#_Toc69879008)

[2.9.69 StyleTextProp10Atom 397](#_Toc69879009)

[2.9.70 StyleTextProp11Atom 397](#_Toc69879010)

[2.9.71 StyleTextProp11 398](#_Toc69879011)

[2.9.72 BlipCollection9Container 399](#_Toc69879012)

[2.9.73 BlipEntityAtom 399](#_Toc69879013)

[2.9.74 TextDefaults9Atom 400](#_Toc69879014)

[2.9.75 TextDefaults10Atom 401](#_Toc69879015)

[2.9.76 OfficeArtClientTextbox 401](#_Toc69879016)

[2.9.77 TextClientDataSubContainerOrAtom 402](#_Toc69879017)

[2.9.78 OutlineTextRefAtom 403](#_Toc69879018)

[2.9.79 MasterTextPropAtom 404](#_Toc69879019)

[2.9.80 MasterTextPropRun 404](#_Toc69879020)

[2.10 External Object Types 405](#_Toc69879021)

[2.10.1 ExObjListContainer 405](#_Toc69879022)

[2.10.2 ExObjListSubContainer 406](#_Toc69879023)

[2.10.3 ExObjListAtom 406](#_Toc69879024)

[2.10.4 ExAviMovieContainer 407](#_Toc69879025)

[2.10.5 ExVideoContainer 407](#_Toc69879026)

[2.10.6 ExMediaAtom 408](#_Toc69879027)

[2.10.7 UncOrLocalPathAtom 409](#_Toc69879028)

[2.10.8 ExCDAudioContainer 409](#_Toc69879029)

[2.10.9 ExCDAudioAtom 410](#_Toc69879030)

[2.10.10 ExControlContainer 411](#_Toc69879031)

[2.10.11 ExControlAtom 412](#_Toc69879032)

[2.10.12 ExOleObjAtom 413](#_Toc69879033)

[2.10.13 MenuNameAtom 414](#_Toc69879034)

[2.10.14 ProgIDAtom 414](#_Toc69879035)

[2.10.15 ClipboardNameAtom 415](#_Toc69879036)

[2.10.16 ExHyperlinkContainer 415](#_Toc69879037)

[2.10.17 ExHyperlinkAtom 416](#_Toc69879038)

[2.10.18 FriendlyNameAtom 417](#_Toc69879039)

[2.10.19 TargetAtom 418](#_Toc69879040)

[2.10.20 LocationAtom 418](#_Toc69879041)

[2.10.21 ExHyperlink9Container 419](#_Toc69879042)

[2.10.22 ExHyperlinkRefAtom 420](#_Toc69879043)

[2.10.23 ScreenTipAtom 420](#_Toc69879044)

[2.10.24 ExHyperlinkFlagsAtom 421](#_Toc69879045)

[2.10.25 ExMCIMovieContainer 421](#_Toc69879046)

[2.10.26 ExMIDIAudioContainer 422](#_Toc69879047)

[2.10.27 ExOleEmbedContainer 423](#_Toc69879048)

[2.10.28 ExOleEmbedAtom 424](#_Toc69879049)

[2.10.29 ExOleLinkContainer 425](#_Toc69879050)

[2.10.30 ExOleLinkAtom 426](#_Toc69879051)

[2.10.31 ExWAVAudioEmbeddedContainer 427](#_Toc69879052)

[2.10.32 ExWAVAudioEmbeddedAtom 428](#_Toc69879053)

[2.10.33 ExWAVAudioLinkContainer 428](#_Toc69879054)

[2.10.34 ExOleObjStg 429](#_Toc69879055)

[2.10.35 ExOleObjStgUncompressedAtom 429](#_Toc69879056)

[2.10.36 ExOleObjStgCompressedAtom 430](#_Toc69879057)

[2.10.37 ExControlStg 431](#_Toc69879058)

[2.10.38 ExControlStgUncompressedAtom 431](#_Toc69879059)

[2.10.39 ExControlStgCompressedAtom 432](#_Toc69879060)

[2.10.40 VbaProjectStg 432](#_Toc69879061)

[2.10.41 VbaProjectStgUncompressedAtom 432](#_Toc69879062)

[2.10.42 VbaProjectStgCompressedAtom 433](#_Toc69879063)

[2.11 Other Types 434](#_Toc69879064)

[2.11.1 DocRoutingSlipAtom 434](#_Toc69879065)

[2.11.2 DocRoutingSlipString 436](#_Toc69879066)

[2.11.3 EnvelopeFlags9Atom 437](#_Toc69879067)

[2.11.4 EnvelopeData9Atom 437](#_Toc69879068)

[2.11.5 FontEmbedDataBlob 438](#_Toc69879069)

[2.11.6 MetafileBlob 439](#_Toc69879070)

[2.11.7 RoundTripAnimationAtom 439](#_Toc69879071)

[2.11.8 RoundTripAnimationHashAtom 440](#_Toc69879072)

[2.11.9 RoundTripColorMappingAtom 441](#_Toc69879073)

[2.11.10 RoundTripCompositeMasterId12Atom 441](#_Toc69879074)

[2.11.11 RoundTripContentMasterId12Atom 442](#_Toc69879075)

[2.11.12 RoundTripContentMasterInfo12Atom 443](#_Toc69879076)

[2.11.13 RoundTripCustomTableStyles12Atom 443](#_Toc69879077)

[2.11.14 RoundTripDocFlags12Atom 444](#_Toc69879078)

[2.11.15 RoundTripHeaderFooterDefaults12Atom 444](#_Toc69879079)

[2.11.16 RoundTripHFPlaceholder12Atom 445](#_Toc69879080)

[2.11.17 RoundTripNewPlaceholderId12Atom 446](#_Toc69879081)

[2.11.18 RoundTripNotesMasterTextStyles12Atom 446](#_Toc69879082)

[2.11.19 RoundTripOArtTextStyles12Atom 447](#_Toc69879083)

[2.11.20 RoundTripOriginalMainMasterId12Atom 447](#_Toc69879084)

[2.11.21 RoundTripShapeCheckSumForCustomLayouts12Atom 448](#_Toc69879085)

[2.11.22 RoundTripShapeId12Atom 449](#_Toc69879086)

[2.11.23 RoundTripSlideSyncInfo12Container 449](#_Toc69879087)

[2.11.24 ServerIdAtom 450](#_Toc69879088)

[2.11.25 SlideLibUrlAtom 451](#_Toc69879089)

[2.11.26 SlideSyncInfoAtom12 451](#_Toc69879090)

[2.11.27 RoundTripThemeAtom 452](#_Toc69879091)

[2.11.28 SmartTagStore11Container 453](#_Toc69879092)

[2.11.29 SoundDataBlob 454](#_Toc69879093)

[2.11.30 ProgStringTagContainer 454](#_Toc69879094)

[2.11.31 TagNameAtom 455](#_Toc69879095)

[2.11.32 TagValueAtom 455](#_Toc69879096)

[2.11.33 UnknownBinaryTag 456](#_Toc69879097)

[2.11.34 BinaryTagDataBlob 456](#_Toc69879098)

[2.12 Common Structures 457](#_Toc69879099)

[2.12.1 ColorStruct 457](#_Toc69879100)

[2.12.2 ColorIndexStruct 457](#_Toc69879101)

[2.12.3 WideColorStruct 458](#_Toc69879102)

[2.12.4 DateTimeStruct 458](#_Toc69879103)

[2.12.5 PointStruct 459](#_Toc69879104)

[2.12.6 RatioStruct 459](#_Toc69879105)

[2.12.7 RectStruct 459](#_Toc69879106)

[2.12.8 SmallRectStruct 460](#_Toc69879107)

[2.12.9 ScalingStruct 460](#_Toc69879108)

[2.12.10 TmsfTimeStruct 461](#_Toc69879109)

[2.13 Enumerations 461](#_Toc69879110)

[2.13.1 AnimAfterEffectEnum 461](#_Toc69879111)

[2.13.2 AnimBuildTypeEnum 461](#_Toc69879112)

[2.13.3 BuildTypeEnum 463](#_Toc69879113)

[2.13.4 ChartBuildEnum 463](#_Toc69879114)

[2.13.5 ColorModeEnum 464](#_Toc69879115)

[2.13.6 ConditionEnum 464](#_Toc69879116)

[2.13.7 DiagramBuildEnum 464](#_Toc69879117)

[2.13.8 DiffTypeEnum 465](#_Toc69879118)

[2.13.9 ElementTypeEnum 466](#_Toc69879119)

[2.13.10 ExColorFollowEnum 466](#_Toc69879120)

[2.13.11 ExOleObjSubTypeEnum 467](#_Toc69879121)

[2.13.12 ExOleObjTypeEnum 467](#_Toc69879122)

[2.13.13 InteractiveInfoActionEnum 468](#_Toc69879123)

[2.13.14 InteractiveInfoJumpEnum 468](#_Toc69879124)

[2.13.15 LinkToEnum 468](#_Toc69879125)

[2.13.16 NormalViewSetBarStates 469](#_Toc69879126)

[2.13.17 OLEVerbEnum 469](#_Toc69879127)

[2.13.18 ParaBuildEnum 469](#_Toc69879128)

[2.13.19 PhotoAlbumFrameShapeEnum 470](#_Toc69879129)

[2.13.20 PhotoAlbumLayoutEnum 470](#_Toc69879130)

[2.13.21 PlaceholderEnum 471](#_Toc69879131)

[2.13.22 PlaceholderSize 472](#_Toc69879132)

[2.13.23 PrintWhatEnum 472](#_Toc69879133)

[2.13.24 RecordType 473](#_Toc69879134)

[2.13.25 SlideLayoutType 482](#_Toc69879135)

[2.13.26 SlideSizeEnum 483](#_Toc69879136)

[2.13.27 TextAlignmentEnum 483](#_Toc69879137)

[2.13.28 TextAutoNumberSchemeEnum 484](#_Toc69879138)

[2.13.29 TextBuildSubEffectEnum 485](#_Toc69879139)

[2.13.30 TextDirectionEnum 486](#_Toc69879140)

[2.13.31 TextFontAlignmentEnum 486](#_Toc69879141)

[2.13.32 TextTabTypeEnum 486](#_Toc69879142)

[2.13.33 TextTypeEnum 486](#_Toc69879143)

[2.13.34 TimeAnimateBehaviorValueTypeEnum 487](#_Toc69879144)

[2.13.35 TimeCommandBehaviorTypeEnum 487](#_Toc69879145)

[2.13.36 TimeNodeTypeEnum 487](#_Toc69879146)

[2.13.37 TimePropertyID4TimeBehavior 488](#_Toc69879147)

[2.13.38 TimePropertyID4TimeNode 488](#_Toc69879148)

[2.13.39 TimeVariantTypeEnum 489](#_Toc69879149)

[2.13.40 TimeVisualElementEnum 489](#_Toc69879150)

[2.13.41 TriggerObjectEnum 489](#_Toc69879151)

[2.13.42 ViewTypeEnum 490](#_Toc69879152)

[2.13.43 WebFrameColorsEnum 491](#_Toc69879153)

[2.13.44 WebOutputEnum 491](#_Toc69879154)

[3 Structure Examples 492](#_Toc69879155)

[3.1 Introduction 492](#_Toc69879156)

[3.2 File Structure 503](#_Toc69879157)

[3.3 Persist Objects 509](#_Toc69879158)

[3.4 Outline Text 511](#_Toc69879159)

[3.5 Slides 518](#_Toc69879160)

[3.5.1 Master Slides 518](#_Toc69879161)

[3.5.2 Presentation Slides 520](#_Toc69879162)

[3.5.3 Notes Slides 531](#_Toc69879163)

[3.6 Programmable Tags 538](#_Toc69879164)

[3.6.1 Document Programmable Tags 538](#_Toc69879165)

[3.6.2 Slide Programmable Tags 541](#_Toc69879166)

[3.7 Animation 542](#_Toc69879167)

[3.7.1 Text Animation 542](#_Toc69879168)

[3.7.2 Shape Animation 556](#_Toc69879169)

[3.8 Shape Client Data 595](#_Toc69879170)

[3.8.1 Shape Anchor 595](#_Toc69879171)

[3.8.2 Shape Placeholder 597](#_Toc69879172)

[3.8.3 Shape Text 598](#_Toc69879173)

[3.8.4 OLE Object 600](#_Toc69879174)

[3.8.5 External Video 604](#_Toc69879175)

[3.9 Text 606](#_Toc69879176)

[3.9.1 Paragraph Formatting 606](#_Toc69879177)

[3.9.2 Character Formatting 612](#_Toc69879178)

[3.9.3 TextInteractiveInfo 619](#_Toc69879179)

[3.9.4 Metacharacter 622](#_Toc69879180)

[4 Security Considerations 626](#_Toc69879181)

[5 Appendix A: Product Behavior 627](#_Toc69879182)

[6 Change Tracking 634](#_Toc69879183)

[7 Index 635](#_Toc69879184)

# Introduction

This document specifies the binary file format for a PowerPoint (PPT) file (.ppt) used by Microsoft PowerPoint 97, Microsoft PowerPoint 2000, Microsoft PowerPoint 2002, and Microsoft Office PowerPoint 2003. A PPT file is a collection of records and structures that specify [**slides**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc), [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e), pictures, audio, video, text, and other [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) content. This content can then be delivered to an audience by means of a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

Each record has a common header that specifies the record type and any additional data that follows. This file format provides an efficient way to parse only records that contain content of interest to a particular implementation and to skip any other records.

Sections 1.7 and 2 of this specification are normative. All other sections and examples in this specification are informative.

## Glossary

This document uses the following terms:

**ActiveX control**: A reusable software control, such as a check box or button, that uses ActiveX technology and provides options to users or runs macros or scripts that automate a task. See also ActiveX object.

**add-in**: Supplemental functionality that is provided by an external application or macro to extend the capabilities of an application.

**atom record**: A record that contains presentation data. Analogous to a file system, atom records are similar to files that contain data and container records are similar to directories that provide structure and hierarchy for atom records.

**Audio Interchange File Format (AIFF)**: A sound file format that was originally used on Macintosh and Silicon Graphics (SGI) computers. AIFF stores waveform files in an 8-bit monaural format. See also [**waveform (WAV)**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5).

**Audio Video Interleaved (AVI)**: A multimedia file format for sound and video that uses the Microsoft Resource Interchange File Format (RIFF).

**Augmented Backus-Naur Form (ABNF)**: A modified version of Backus-Naur Form (BNF), commonly used by Internet specifications. ABNF notation balances compactness and simplicity with reasonable representational power. ABNF differs from standard BNF in its definitions and uses of naming rules, repetition, alternatives, order-independence, and value ranges. For more information, see [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096).

**big-endian**: Multiple-byte values that are byte-ordered with the most significant byte stored in the memory location with the lowest address.

**bookmark**: An entity that is used in a document to denote the beginning and ending character positions of specific text in the document, and optionally, metadata about that text or its relationship to other referenced parts of the document.

**Boolean**: An operation or expression that can be evaluated only as either true or false.

**build**: An animation effect that is applied to content on a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192). The complete animation for a given piece of content is specified as a sequence of builds, where each build causes parts of the content to appear, disappear, move, or be emphasized in some manner.

**build identifier**: An integer that identifies a [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252).

**code page**: An ordered set of characters of a specific script in which a numerical index (code-point value) is associated with each character. Code pages are a means of providing support for character sets and keyboard layouts used in different countries. Devices such as the display and keyboard can be configured to use a specific code page and to switch from one code page (such as the United States) to another (such as Portugal) at the user's request.

**color scheme**: A table of color values that enables colors to be referenced by an index value in the table instead of a color value. See also color palette.

**color space**: A system that describes color numerically by mapping color components to a multidimensional coordinate system. The number of dimensions is typically two, three, or four. For example, if colors are expressed as a combination of the three components red, green, and blue, a three-dimensional space can describe all possible colors. Grayscale colors can be mapped to a two-dimensional color space. If transparency is considered a component, four dimensions are appropriate. Also referred to as color model.

**computer name**: The DNS or NetBIOS name.

**container record**: A record that defines the structure and hierarchy of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) and other container records.

**cyclic redundancy check (CRC)**: An algorithm used to produce a checksum (a small, fixed number of bits) against a block of data, such as a packet of network traffic or a block of a computer file. The CRC is a broad class of functions used to detect errors after transmission or storage. A CRC is designed to catch random errors, as opposed to intentional errors. If errors might be introduced by a motivated and intelligent adversary, a cryptographic hash function should be used instead.

**encrypted document**: A document that was converted from plaintext into cipher text to disguise the content of the document when it is stored or sent.

**envelope**: A container that stores the information that is used to send a document, workbook, or presentation in an email message. The information includes the intended recipients, the subject of the email message, and any attachments to be included.

**external object**: An object such as a movie file, audio file, OLE object, or hyperlink that can be associated with a presentation or document.

**floating-point number**: A number that is represented by a mantissa and an exponent according to a given base. The mantissa is typically a value between "0" and "1". To find the value of a floating-point number, the base is raised to the power of the exponent, and the mantissa is multiplied by the result.

**footer**: One or more lines of text in the bottom margin area of a page in a document or a slide in a presentation. A footer typically contains elements such as the page number and the name of the file.

**grid unit**: A unit of linear measurement that is equal to 1/1024 master unit or 1/589824 inch.

**guide**: A vertical or a horizontal line that can be set as part of the user interface to position and align content on a slide.

**handout master slide**: A slide that defines layout and positioning information for handout pages, which are pages that are optimized for printing a presentation.

**handout slide**: A slide that is taken from a presentation and then printed and distributed to the audience of the presentation. Users can select the number of slides to be printed on each page in a handout.

**header**: A line, or lines, of content in the top margin area of a page in a document or a slide in a presentation. A header typically contains elements such as the title of the chapter, the title of the document, a page number, or the name of the author.

**hue-saturation-luminance (HSL)**: A color model that defines a color by using three dimensions: hue, the color itself; saturation, the purity of the color; and luminance, the amount of light that is either reflected or absorbed by the color. See also [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) and [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5).

**hyperlink**: A relationship between two anchors, as described in [[RFC1866]](https://go.microsoft.com/fwlink/?LinkId=90296).

**kiosk mode**: A display mode in which a single window expands to fill the whole screen. In kiosk mode, the toolbar and menu bar are not displayed, and the desktop is inaccessible.

**little-endian**: Multiple-byte values that are byte-ordered with the least significant byte stored in the memory location with the lowest address.

**macro**: A set of instructions that are recorded or written, and then typically saved to a file. When a macro is run, all of the instructions are performed automatically.

**main master slide**: A slide that defines the formatting and content that can be used by presentation slides. If a slide uses formatting and content from a main master slide, it is referred to as following a main master slide.

**master unit**: A unit of linear measurement that is equal to 1/576 inch.

**Media Control Interface (MCI)**: A part of the Windows API that enables an application to control multimedia devices. The term is also used to generically describe any media object that can be played through the interface.

**metafile**: A file that stores an image as graphical objects, such as lines, circles, and polygons, instead of pixels. A metafile preserves an image more accurately than pixels when an image is resized.

**Musical Instrument Digital Interface (MIDI)**: A specification of the MIDI Manufacturers Association (MMA). The specification for Musical Instrument Digital Interface (MIDI) defines a protocol for describing music data, such as note on and note off messages; a file format for storing music data, called Standard MIDI; and a standard hardware interface.

**named show**: A named sequence of slides that can be displayed as a slide show.

**notes master slide**: A slide that defines the formatting and content that can be used by notes slides for a presentation. If a notes slide uses formatting and content from a notes master slide, it is referred to as following a notes master slide.

**notes slide**: A slide that contains presentation notes or other information that is not displayed during a slide show. The formatting and content of a notes slide can derive from a notes master slide.

**Object Linking and Embedding (OLE)**: A technology for transferring and sharing information between applications by inserting a file or part of a file into a compound document. The inserted file can be either embedded or linked. See also embedded object and linked object.

**OLE compound file**: A form of structured storage, as described in [[MS-CFB]](%5bMS-CFB%5d.pdf#Section_53989ce47b054f8d829bd08d6148375b). A compound file allows independent storages and streams to exist within a single file.

**OLE object**: An object that supports the [**Object Linking and Embedding (OLE)**](#gt_171744b8-3f44-4198-b7b9-1c0147282d2c) protocol.

**OLE verb**: An action defined by an OLE-linked object that specifies what behaviors can be applied to it.

**persist object**: A top-level object that can be independently persisted and that forms the basis of an incremental save model. A persist object is one of the following: presentation document, main master slide, title master slide, handout master slide, notes master slide, presentation slide, notes slide, OLE object storage, or Microsoft Visual Basic for Applications (VBA) project storage.

**persist object directory**: A table of persist object identifiers and stream offsets to where persist objects can be found. Each user edit stores a persist object directory that identifies where any new and modified persist objects can be found.

**persist object identifier**: A unique identifier that is associated with a persist object and is stored in a persist object directory.

**placeholder**: A character or symbol that is used in place of an actual value, text, or object. The actual value that the placeholder represents is unknown or unavailable at the current time, or is not displayed for security reasons.

**placeholder shape**: A special type of shape in a presentation that usually includes common visual properties. These are used to effect a uniform look among different slides, or to uniformly represent meta-information about each slide.

**point**: A unit of measurement for fonts and spacing. A point is equal to 1/72 of an inch.

**Portable Network Graphics (PNG)**: A bitmap graphics file format that uses lossless data compression and supports variable transparency of images (alpha channels) and control of image brightness on different computers (gamma correction). PNG-format files have a .png file name extension.

**presentation**: A collection of slides that are intended to be viewed by an audience.

**presentation broadcast**: A feature that enables users to run a presentation over the web. The presentation is saved in HTML format and can contain audio and video. It can also be recorded and saved for viewing later.

**presentation comment**: A text note that is attached to a slide to enable readers of a presentation to provide feedback to the presentation author.

**presentation slide**: A slide that contains the content that can be displayed during a slide show. A presentation slide can derive formatting and content from a main master slide or a title master slide.

**programmable tag**: A name/value pair. The value can be either a Unicode string or binary data.

**red-green-blue (RGB)**: A color model that describes color information in terms of the red (R), green (G), and blue (B) intensities in a color.

**routing slip**: Information that specifies how a document is to be distributed from a document originator and processed by one or more recipients. It also specifies subject and message body text that is associated with the document routing process and routing status or workflow information.

**seed**: A value that is greater than or equal to all other values in a set of values and is used to create the next value in the set.

**shape**: A collection of qualifiers, such as names, and quantifiers, such as coordinates, that is used to represent a geometric object. A shape can be contained in a document, file structure, run-time structure, or other medium.

**shape identifier**: An integer that corresponds to a shape object or an instantiation of a shape object.

**slide**: A frame that contains text, shapes, pictures, or other content. A slide is a digital equivalent to a traditional film slide.

**slide layout**: An organizational scheme, such as Title Only or Comparison, for content on a presentation slide.

**slide show**: A delivery of a sequence of presentation slides, typically to an audience.

**smart tag**: A feature that adds the ability to recognize and label specific data types, such as people's names, within a document and displays an action button that enables users to perform common tasks for that data type.

**sound identifier**: A unique identifier for an embedded or linked sound.

**table object**: A group of shapes that are arranged in rows and columns to form a table.

**text ruler**: A collection of settings for tabs, margins, and indentation of text. See also ruler.

**time condition**: A logical condition that can be evaluated, or an event that can be triggered, to determine whether timed object behavior starts or ends. Conditions include items such as the start or end of time nodes, keyboard presses, mouse clicks, or delegate events. See also [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

**time node**: A record or parent node that stores the information that is necessary to cause a time- or action-based effect to occur. Each time node has a corresponding object to which an effect is applied. It can be used randomly, simultaneously, or sequentially, and it can be used to specify certain time-based effects between objects that are being animated. Effects include visual and media behaviors.

**title master slide**: A slide that defines the formatting and content that can be used by presentation slides that have a title slide layout. If a slide uses formatting and content from a title master slide, it is referred to as following a title master slide.

**Unicode**: A character encoding standard developed by the Unicode Consortium that represents almost all of the written languages of the world. The [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) standard [[UNICODE5.0.0/2007]](https://go.microsoft.com/fwlink/?LinkId=154659) provides three forms (UTF-8, UTF-16, and UTF-32) and seven schemes (UTF-8, UTF-16, UTF-16 BE, UTF-16 LE, UTF-32, UTF-32 LE, and UTF-32 BE).

**Uniform Resource Locator (URL)**: A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [[RFC1738]](https://go.microsoft.com/fwlink/?LinkId=90287).

**Universal Naming Convention (UNC)**: A string format that specifies the location of a resource. For more information, see [[MS-DTYP]](%5bMS-DTYP%5d.pdf#Section_cca2742956894a16b2b49325d93e4ba2) section 2.2.57.

**user edit**: A set of persist objects and a persist object directory that represent changes made by a user. Each time a file is written, a user edit that contains only those persist objects that are new or modified from the previous user edit can be appended to the pre-existing record stream. The persist objects and the persist object directory in a later user edit supersede those in a previous user edit.

**VBA project**: A collection of the modules, class modules, and user forms that are needed to create an application. Modules, class modules, and user forms can be imported into and exported from a project.

**Vector Markup Language (VML)**: A system of marking up or tagging two-dimensional vector graphics for publication on the World Wide Web. VML graphics are scalable and editable, and typically require less disk space and less time to download.

**Visual Basic for Applications (VBA)**: A macro-based programming language that derives from Microsoft Visual Basic and can be used to customize and extend an application. Unlike Visual Basic, VBA code and macros can be run only from within a host application that supports VBA.

**waveform (WAV)**: A file format in which Windows stores sounds as waveforms. Depending on the sampling frequency, whether the sound is monaural or stereo, and whether 8 or 16 bits are used for each sample, one minute of sound can occupy as little as 644 kilobytes or as much as 27 megabytes of storage. Waveform files have a .wav file name extension.

**MAY, SHOULD, MUST, SHOULD NOT, MUST NOT:** These terms (in all caps) are used as defined in [[RFC2119]](https://go.microsoft.com/fwlink/?LinkId=90317). All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

## References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](https://go.microsoft.com/fwlink/?linkid=850906).

### Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

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[MS-DTYP] Microsoft Corporation, "[Windows Data Types](%5bMS-DTYP%5d.pdf#Section_cca2742956894a16b2b49325d93e4ba2)".

[MS-EMF] Microsoft Corporation, "[Enhanced Metafile Format](%5bMS-EMF%5d.pdf#Section_91c257d7c39d4a369b1f63e3f73d30ca)".

[MS-LCID] Microsoft Corporation, "[Windows Language Code Identifier (LCID) Reference](%5bMS-LCID%5d.pdf#Section_70feba9f294e491eb6eb56532684c37f)".

[MS-ODRAW] Microsoft Corporation, "[Office Drawing Binary File Format](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872)".

[MS-OFFCRYPTO] Microsoft Corporation, "[Office Document Cryptography Structure](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083)".

[MS-OFORMS] Microsoft Corporation, "[Office Forms Binary File Formats](%5bMS-OFORMS%5d.pdf#Section_9c79701a8c3e4429a139b60ac3a1d50a)".

[MS-OLEPS] Microsoft Corporation, "[Object Linking and Embedding (OLE) Property Set Data Structures](%5bMS-OLEPS%5d.pdf#Section_bf7aeae8c47a49399f45700158dac3bc)".

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[MS-OVBA] Microsoft Corporation, "[Office VBA File Format Structure](%5bMS-OVBA%5d.pdf#Section_575462babf6741909facc275523c75fc)".

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## Overview

### Presentation Document

A [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) is a collection of [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) intended to be viewed by an audience during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). In addition to presentation slides and slide show settings, it stores [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) containing speaker notes and a [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577) that determines how to print presentation handouts.

The following sections elaborate on the various types of [**slides**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc), their contents, and slide show behaviors.

See the Document Types (section [2.4](#Section_0af5c117a68443879617bf6693246cb1)) for records pertaining to the document as a whole.

### Slides

[**Slides**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) are the basic building blocks of a [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae). Each slide contains user data such as [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e), text, animations, and media. A [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) sequentially displays each [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) within the presentation to an audience.

The [**main master slides**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) and [**title master slides**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e) are special types of slides that define common visual properties such as content and formatting for a group of presentation slides. A presentation slide inherits visual properties defined in a main master slide or title master slide. Inheritance of visual properties is referred to as following that main master slide or title master slide. Likewise, the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a) and the [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577) serve a similar purpose and provide common visual properties for all [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) and all printed handouts respectively.

See the Slide Types (section [2.5](#Section_c2969b61333a40e28cc8498dd5f10198)) for records pertaining to slides. Also see the Slides Example (section [3.5](#Section_abdcb7cd4cc142fea805ed89403b4fae)) for examples about slides.

### Shapes

[**Shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) are the primary way to represent data on a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc). Different types of shapes such as [**placeholder shapes**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), pictures, and graphs allow users to add a variety of content to a slide. Shapes on a master slide define common data for groups of shapes.

See the Shape Types (section [2.7](#Section_4a65d3a5e6db46648e62f8d5f0cb5f34)) for records pertaining to shapes. Also see Office Drawing Binary File Format Structure Specification, [[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872), for more information about shapes.

### Placeholders Shapes

[**Placeholder shapes**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) are specialized [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) that serve as containers for a variety of objects. Title and body placeholder shapes can be used to extract an outline text representation of the document. Header, footer, date, and slide-number placeholder shapes can be used to uniformly present meta-information on each [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc). Various object placeholder shapes can be used to provide clues to insert specific types of shapes, such as tables or charts.

When contained within [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) or [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65), a placeholder shape inherits its visual properties from a corresponding placeholder shape on a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d), [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e), or [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

### External Objects

[**Slides**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) can contain objects that link to resources external to the presentation document. Presenters can activate linked objects to access external resources during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). Examples of [**external objects**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d) are embedded and linked audio, linked video, embedded and linked [**OLE objects**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096), and hyperlinks.

See the External Object Types (section [2.10](#Section_2e9b96c144e5434b8f6a6cf5cab7f9eb)) for records pertaining to external objects.

### Animation

One or more animation effects can be applied to a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) or the text in a shape. Animation effects vary one or more of the shape’s properties over a defined period of time during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). Each [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) has a timeline that stores timing and sequencing information for all animations on that slide. Animations are displayed according to the timeline during a slide show.

#### Timeline

A [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) timeline defines the order, duration, start conditions, and exit conditions for all animations on a slide. Each slide has exactly one timeline.

[**Time nodes**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) are the basic building blocks for timelines. Each time node stores the order, duration, start conditions, and exit conditions for an animation effect. A timeline can contain an unlimited number of time nodes organized in a tree structure.

There are two main types of time nodes, as described in the following table:

| Time node | Description |
| --- | --- |
| Parallel | A time node whose child nodes are executed in parallel. |
| Sequence | A time node whose child nodes are executed only after the previous sibling has started to be executed. |

#### Conditional Properties

Conditional properties allow more granular control and choreography between [**time nodes**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) in a timeline. These properties specify conditions that need to be met before a time node starts or finishes executing. For example, it allows an animation to be started when a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) is first displayed or when triggered by a user action.

There are four such conditional properties, as described in the following table:

| Time node | Description |
| --- | --- |
| Start Condition | Conditions that control when a time node starts. |
| Previous Condition | Conditions that control when the timeline goes back to the previous time node. |
| Next Conditions | Conditions that control when the timeline advances to next time node. |
| End Conditions | Conditions that need to be met for a time node to end. |

#### Behaviors

Animation effects vary one or more properties of a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e). Variation of a property over time is called a behavior. Available behaviors are dependent on the type of shape being animated. For example, a geometric shape supports behaviors that change its color and size while a video shape supports behaviors that define its playback.

Behaviors belong to the basic types described in the following table:

| Behavior type | Description |
| --- | --- |
| Animate | Animates any property of an object that is either a numerical or a string value. |
| Animate Color | Animates the color values of an object. |
| Animate Effect | Allows image transformations and filter animations on an object. |
| Animate Motion | Animates position properties of an object by using either key-frame data or detailed path descriptions that include Bezier curves or lines. |
| Animate Rotation | Animates the orientation of an object. |
| Animate Scale | Animates the width and height of an object over time. |

A [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) can combine multiple animations to create complex effects. For example, the "flash bulb" animation, which scales a shape larger while simultaneously fading it, uses two animation behavior elements. An example is shown in the following figure:

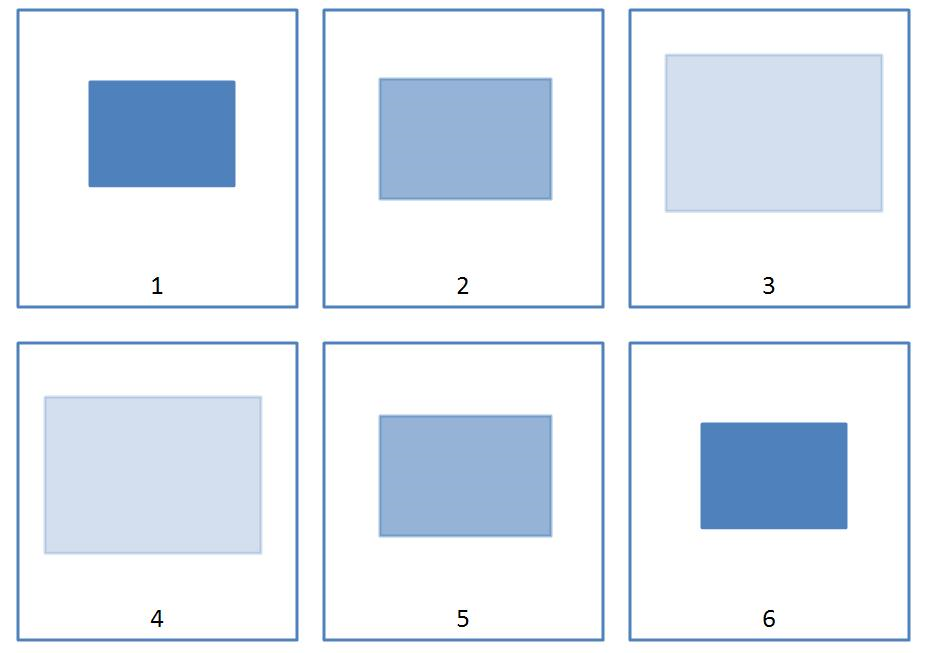


Figure 1: Simultaneous color and scale animations

#### Builds

Some [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e), such as text, diagrams, and graphs, have component objects. A text [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), for example, can contain multiple lines of text. A pie chart can contain multiple slices. Build order allows for the animation of component objects within a shape.

An example of animating a pie chart by category is shown in the following figure:

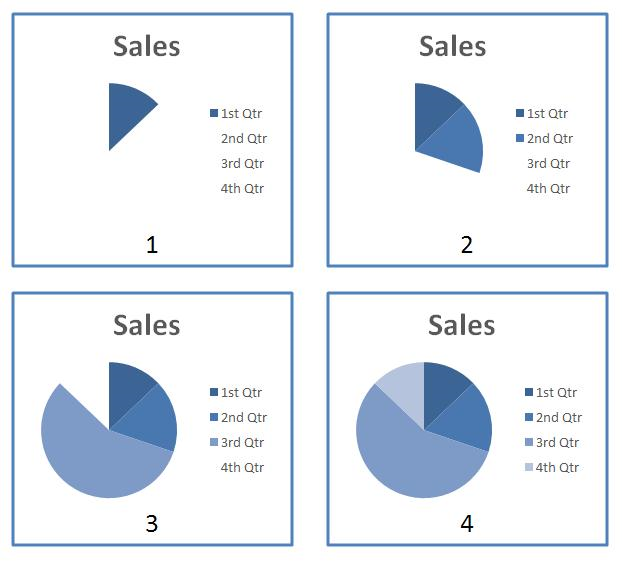


Figure 2: A chart-build animation

See the Animation Types (section [2.8](#Section_ab4f336392424581a3b93f7c68f751c2)) for records pertaining to animation.

### Slide show

A [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) delivers [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) to an audience. During a slide show, each presentation slide is displayed sequentially in the order it is stored. Users can add animation effects between [**slides**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc), and they can create a custom sequence of slides by using a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

#### Named Show

By default, a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) sequentially displays all [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192). A [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510) specifies a sequence of presentation slides during a slide show that is different from the order in which the presentation slides themselves are stored. Named shows can contain a subset of all presentation slides in a document.

#### Slide Transitions

Slide transitions are the animation effects displayed between [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192). An example of a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) that has a "push" slide transition is shown in the following figure:

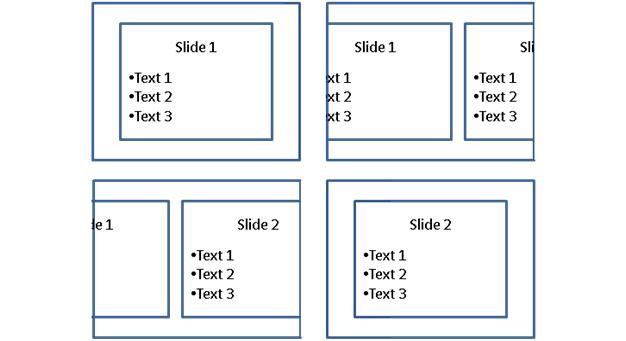


Figure 3: A "push" slide transition

See the Slide Show Types (section [1.3.7](#Section_83bbe15a04a54a0bb52b016a79f92926)) for records pertaining to [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

### Byte Ordering

Some computer architectures number bytes in a binary word from left to right, a format that is referred to as [**big-endian**](#gt_6f6f9e8e-5966-4727-8527-7e02fb864e7e). The packet diagrams for this documentation are big-endian. Other architectures number the bytes in a binary word from right to left, a format that is referred to as [**little-endian**](#gt_079478cb-f4c5-4ce5-b72b-2144da5d2ce7). The underlying file format enumerations, objects, and records are little-endian.

Using big-endian and little-endian methods, the number 0x12345678 is stored as shown in the following table:

| Byte order | Byte 0 | Byte 1 | Byte 2 | Byte 3 |
| --- | --- | --- | --- | --- |
| Big-endian | 0x12 | 0x34 | 0x56 | 0x78 |
| Little-endian | 0x78 | 0x56 | 0x34 | 0x12 |

Unless otherwise specified, all data in the PowerPoint Binary File Format is stored in little-endian format.

## Relationship to Protocols and Other Structures

This file format is an [**OLE compound file**](#gt_b39d4d3a-2d16-4bab-b9fd-ba8e1f16e6a4) as described in [[MS-CFB]](%5bMS-CFB%5d.pdf#Section_53989ce47b054f8d829bd08d6148375b). It is dependent on the structures described in the following references:

* [[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) for the persistence format for [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).
* [[MS-OVBA]](%5bMS-OVBA%5d.pdf#Section_575462babf6741909facc275523c75fc) for the persistence format for a [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e).
* [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) for the persistence format for document signing, information rights management, document encryption and obfuscation.
* [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) for the persistence format for additional common structures.

This file format has been superseded by [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) in Microsoft Office PowerPoint 2007 and by [[ISO/IEC29500-1:2012]](https://go.microsoft.com/fwlink/?LinkId=325242) in Microsoft PowerPoint 2010 and Microsoft PowerPoint 2013.

## Applicability Statement

This document specifies a persistence format for [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) content and templates, which can include slides, drawing objects, text, images, transitions, and animations. This persistence format is applicable when the primary presentation format for the contained information is electronic.

This persistence format is applicable for use as a stand-alone document, and for containment within other documents as an embedded object as described in [[MS-OLEDS]](%5bMS-OLEDS%5d.pdf#Section_85583d21c1cf4afea35fd6701c5fbb6f).

This persistence format provides interoperability with applications that create or read documents conforming to this structure, including PowerPoint 97, PowerPoint 2000, PowerPoint 2002, and Office PowerPoint 2003. This persistence format can also be used for interoperability with Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 when compatibility with PowerPoint 97, PowerPoint 2000, PowerPoint 2002, and Office PowerPoint 2003 is a primary concern.

## Versioning and Localization

None.

## Vendor-Extensible Fields

This persistence format can be extended by storing information in streams and storages that are not described in section [2](#Section_1d6ee42810314d8ba8b3fc39324ae6e1). Implementations are not required to preserve or remove additional streams or storages when modifying an existing document.

# Structures

## File Streams and Storages

As an [**OLE compound file**](#gt_b39d4d3a-2d16-4bab-b9fd-ba8e1f16e6a4), this file format specification is organized as a hierarchy of storages and streams as specified in [[MS-CFB]](%5bMS-CFB%5d.pdf#Section_53989ce47b054f8d829bd08d6148375b). The following sections list the top-level storages and streams found in a file.

### Current User Stream

A required stream whose name MUST be "Current User".

The contents of this stream are specified by the **CurrentUserAtom** record (section [2.3.2](#Section_940d5700e4d74fc0ab48fed5dbc48bc1)).

### PowerPoint Document Stream

A required stream whose name MUST be "PowerPoint Document".

Let a *top-level record* be specified as any one of the following: **DocumentContainer** (section [2.4.1](#Section_6254c4d152174e16b20dc04ddcce31c9)), **MasterOrSlideContainer** (section [2.5.5](#Section_018cc2701573402aa3e8d83e8dc96813)), **HandoutContainer** (section [2.5.8](#Section_bf6d1f839023412089c3fb69e49d0212)), **SlideContainer** (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)), **NotesContainer** (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)), **ExOleObjStg** (section [2.10.34](#Section_21e29c16df3a435280172c48864d2548)), **ExControlStg** (section [2.10.37](#Section_dc8d8818de0e463e9f26a9bad364245d)), **VbaProjectStg** (section [2.10.40](#Section_6c391284f2e14b90a93f780e6a8519ff)), **PersistDirectoryAtom** (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)), or **UserEditAtom** (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)) record.

The contents of this stream are specified by a sequence of *top-level records*. Partial ordering restrictions on the record sequence are specified in the **PersistDirectoryAtom** and **UserEditAtom** records.

As [**container records**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d), the **DocumentContainer**, **MainMasterContainer** (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), **HandoutContainer** (section 2.5.8), **SlideContainer** (section 2.5.1), and **NotesContainer** (section 2.5.6) records are each the root of a tree of container records and [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a). Inside any container record, other records can exist that are not explicitly listed as child records. Unknown records are identified when the **recType** field of the **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) contains a value not specified by the **RecordType** enumeration (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). These unknown records, if encountered, MUST be ignored, and MAY[<1>](#Appendix_A_1" \o "Product behavior note 1) be preserved. Unknown records can be ignored by seeking forward **recLen** bytes from the end of the **RecordHeader** structure.

Each time this stream is written, new *top-level records*, a [**user edit**](#gt_7d9321a6-b9a8-4481-87be-58d6389acc0e), can be appended to the existing stream, or the entire stream contents can be replaced with an updated sequence of *top-level records*. If the entire stream is not replaced, any previously existing *top-level records* that comprised any previous user edit, can be made obsolete by the subsequently appended *top-level records* that comprise the current user edit.

Let a *live record* be specified as any *top-level record* in this stream, or any descendant of a *top-level record* in this stream, identified by the following process:

Part 1: Construct the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1).

1. Read the **CurrentUserAtom** record (section [2.3.2](#Section_940d5700e4d74fc0ab48fed5dbc48bc1)) from the **Current User Stream** (section [2.1.1](#Section_76cfa65707a6464b81ab4c017c611f64)). All seek operations in the steps that follow this step are in the **PowerPoint Document Stream**.
2. Seek, in the **PowerPoint Document Stream**, to the offset specified by the **offsetToCurrentEdit** field of the **CurrentUserAtom** record identified in step 1.
3. Read the **UserEditAtom** record at the current offset. Let this record be a *live record*.
4. Seek to the offset specified by the **offsetPersistDirectory** field of the **UserEditAtom** record identified in step 3.
5. Read the **PersistDirectoryAtom** record at the current offset. Let this record be a *live record*.
6. Seek to the offset specified by the **offsetLastEdit** field in the **UserEditAtom** record identified in step 3.
7. Repeat steps 3 through 6 until **offsetLastEdit** is 0x00000000.
8. Construct the complete persist object directory for this file as follows:
   1. For each **PersistDirectoryAtom** record previously identified in step 5, add the [**persist object identifier**](#gt_f59810ad-9495-4236-817d-420613003d53) and [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68) stream offset pairs to the persist object directory starting with the **PersistDirectoryAtom** record last identified, that is, the one closest to the beginning of the stream.
   2. Continue adding these pairs to the persist object directory for each **PersistDirectoryAtom** record in the reverse order that they were identified in step 5; that is, the pairs from the **PersistDirectoryAtom** record closest to the end of the stream are added last.
   3. When adding a new pair to the persist object directory, if the persist object identifier already exists in the persist object directory, the persist object stream offset from the new pair replaces the existing persist object stream offset for that persist object identifier.

Part 2: Identify the document persist object.

1. Read the **docPersistIdRef** field of the **UserEditAtom** record first identified in step 3 of Part 1, that is, the **UserEditAtom** record closest to the end of the stream.
2. Lookup the value of the **docPersistIdRef** field in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
3. Seek to the stream offset specified in step 2.
4. Read the **DocumentContainer** record at the current offset. Let this record be a *live record*.

Part 3: Identify the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a) persist object.

1. Read the **documentAtom.notesMasterPersistIdRef** field of the **DocumentContainer** record identified in step 4 of Part 2. If the value of the field is zero, skip to step 1 of Part 4.
2. Lookup the value of the **documentAtom.notesMasterPersistIdRef** field in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
3. Seek to the stream offset specified in step 2.
4. Read the **NotesContainer** record at the current offset. Let this record be a *live record*.

Part 4: Identify the [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577) persist object.

1. Read the **documentAtom.handoutMasterPersistIdRef** field of the **DocumentContainer** record identified in step 4 of Part 2. If the value of the field is zero, skip to step 1 of Part 5.
2. Lookup the value of the **documentAtom.handoutMasterPersistIdRef** field in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
3. Seek to the stream offset specified in step 2.
4. Read the **HandoutContainer** record at the current offset. Let this record be a *live record*.

Part 5: Identify the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) and [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e) persist objects.

1. Read the **MasterListWithTextContainer** record specified by the **masterList** field of the **DocumentContainer** record identified in step 4 of Part 2.
2. Read the first **MasterPersistAtom** (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) child record of the **MasterListWithTextContainer** record identified in step 1.
3. Lookup the value of the **persistIdRef** field of the **MasterPersistAtom** record previously identified in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
4. Seek to the stream offset specified in step 3.
5. Read the **MasterOrSlideContainer** record at the current offset. Let this record be a *live record*.
6. Repeat steps 3 through 5 for each **MasterPersistAtom** child record of the **MasterListWithTextContainer** record identified in step 1.

Part 6: Identify the [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) persist objects.

1. Read the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)), if present, specified by the **slideList** field of the **DocumentContainer** record identified in step 4 of Part 2. If not present, skip to step 1 of Part 7.
2. Read the first **SlidePersistAtom** (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) child record of the **SlideListWithTextContainer** record identified in step 1.
3. Lookup the value of the **persistIdRef** field of the **SlidePersistAtom** record (section 2.4.14.5) previously identified in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
4. Seek to the stream offset specified in step 3.
5. Read the **SlideContainer** record at the current offset. Let this record be a *live record*.
6. Repeat steps 3 through 5 for each **SlidePersistAtom** child record (section 2.4.14.5) of the **SlideListWithTextContainer** record identified in step 1.

Part 7: Identify the [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) persist objects.

1. Read the **NotesListWithTextContainer** record (section [2.4.14.6](#Section_55453e3706744703bd8dfcaba335f840)), if present, specified by the **notesList** field of the **DocumentContainer** record identified in step 4 of Part 2. If not present, skip to step 1 of Part 8.
2. Read the first **NotesPersistAtom** (section [2.4.14.7](#Section_b595ad14a46c4fccb4bd7298712043a4)) child record of the **NotesListWithTextContainer** record identified in step 1.
3. Lookup the value of the **persistIdRef** field of the **NotesPersistAtom** record previously identified in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
4. Seek to the stream offset specified in step 3.
5. Read the **NotesContainer** record at the current offset. Let this record be a *live record*.
6. Repeat steps 3 through 5 for each **NotesPersistAtom** child record of the **NotesListWithTextContainer** record identified in step 1.

Part 8: Identify the [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2) persist objects.

1. Read the **ExObjListContainer** record (section [2.10.1](#Section_3b997d4d79514478acc51c9adbc2627a)), if present, specified by the **exObjList** field of the **DocumentContainer** record identified in step 4 of Part 2. If not present, skip to step 1 of Part 11.
2. Read the first, if any, **ExControlContainer** child record (section [2.10.10](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)) of the **ExObjListContainer** record identified in step 1. If no such child record exists, skip to step 1 of Part 9.
3. Lookup the value of the **exOleObjAtom.persistIdRef** field of the **ExControlContainer** record previously identified in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
4. Seek to the stream offset specified in step 3.
5. Read the **ExControlStg** record at the current offset. Let this record be a *live record*.
6. Repeat steps 3 through 5 for each **ExControlContainer** child record of the **ExObjListContainer** record identified in step 1.

Part 9: Identify the embedded [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) persist objects.

1. Read the first, if any, **ExOleEmbedContainer** child record (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229)) of the **ExObjListContainer** record identified in step 1 of Part 8. If no such child record exists, skip to step 1 of Part 10.
2. Lookup the value of the **exOleObjAtom.persistIdRef** field of the **ExOleEmbedContainer** record previously identified in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
3. Seek to the stream offset specified in step 2.
4. Read the **ExOleObjStg** record at the current offset. Let this record be a *live record*.
5. Repeat steps 2 through 4 for each **ExOleEmbedContainer** child record of the **ExObjListContainer** record identified in step 1 of Part 8.

Part 10: Identify the linked OLE object persist objects.

1. Read the first, if any, **ExOleLinkContainer** child record (section [2.10.29](#Section_5311e92722f04e559f439142998efbd1)) of the **ExObjListContainer** record identified in step 1 of Part 8. If no such child record exists, skip to step 1 of Part 11.
2. Lookup the value of the **exOleObjAtom.persistIdRef** field of the **ExOleLinkContainer** record previously identified in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
3. Seek to the stream offset specified in step 2.
4. Read the **ExOleObjStg** record at the current offset. Let this record be a *live record*.
5. Repeat steps 2 through 4 for each **ExOleLinkContainer** child record of the **ExObjListContainer** record identified in step 1 of Part 8.

Part 11: Identify the [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e) persist object.

1. Read the **DocInfoListContainer** record (section [2.4.4](#Section_f0fed863362f43a0ae7872ae15e56171)), if present, specified by the **docInfoList** field of the **DocumentContainer** record identified in step 4 of Part 2. If not present, skip to step 6.
2. Read the **VBAInfoContainer** (section [2.4.10](#Section_ca0b2c2bb1f8429890bd45296415f0a6)) child record, if present, of the **DocInfoListContainer** record identified in step 1. If no such child record exists, skip to step 6.
3. Lookup the value of the **vbaInfoAtom.persistIdRef** field of the **VBAInfoContainer** record identified in step 2 in the persist object directory constructed in step 8 of Part 1 to find the stream offset of a persist object.
4. Seek to the stream offset specified in step 3.
5. Read the **VbaProjectStg** record at the current offset. Let this record be a *live record*.
6. End of process. All *live records* have been identified.

Let a *dead record* be specified as any *top-level record* in this stream, or any descendant of a *top-level record* in this stream, that is not a *live record*.

All uses of prescriptive terminology (MAY, SHOULD, MUST, SHOULD NOT, MUST NOT) in the specification of records in the following sections apply only to *live records*. The contents of all *dead records* are undefined and MUST be ignored.

### Pictures Stream

An optional stream whose name MUST be "Pictures".

The contents of this stream are specified by the **OfficeArtBStoreDelay** record as specified in [[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.21.

### Summary Information Stream

An optional stream whose name MUST be "\005SummaryInformation", where \005 is the character with value 0x0005, not the string literal "\005". This stream SHOULD be omitted for [**encrypted documents**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220).

The contents of this stream are specified in [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.3.3.2.1.

### Document Summary Information Stream

An optional stream whose name MUST be "\005DocumentSummaryInformation", where \005 is the character with value 0x0005, not the string literal "\005". This stream MAY[<2>](#Appendix_A_2" \o "Product behavior note 2) be omitted for [**encrypted documents**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220).

The contents of this stream are specified in [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.3.3.2.2.

### Encrypted Summary Information Stream

An optional stream whose name MUST be "EncryptedSummary". This stream exists only in an [**encrypted document**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220).

The contents of this stream are specified in [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 2.3.5.4.

### Digital Signature Storage

An optional storage whose name MUST be "\_xmlsignatures". It MAY[<3>](#Appendix_A_3" \o "Product behavior note 3) be omitted and MAY be ignored.

The contents of this storage are specified in [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 2.5.2.

### Custom XML Data Storage

An optional storage whose name MUST be "MsoDataStore".

The contents of the storage are specified in [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.3.6.

### Signatures Stream

An optional stream whose name MUST be "\_signatures". It SHOULD[<4>](#Appendix_A_4" \o "Product behavior note 4) be omitted and MAY be ignored.

The contents of this stream are specified in [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 2.5.1.

## Basic Types

### BlipRef

*Referenced by:* [*TextPFException9*](#Section_3e80f159dab6415da40918ea6975b0c9)

A 2-byte signed integer that specifies a zero-based index of a picture bullet within the collection of picture bullets specified by the **BlipCollection9Container** record (section [2.9.72](#Section_8a93931e05c148be8824deb1c4489c14)). The value 0xFFFF specifies a **null** reference.

### bool1

*Referenced by:* [*BuildAtom*](#Section_baa3c302b96c4f0b851708c50c38952b)*,* [*ChartBuildAtom*](#Section_f3f0965c0aaf43099601fc33308ff0aa)*,* [*DiffRecordHeaders*](#Section_8e2858264cf64479bc4dff5ac5aed8de)*,* [*DocumentAtom*](#Section_121f272834974a0a829e6f416fee2ee6)*,* [*ExOleEmbedAtom*](#Section_003441ca0e10403b92c3ebcd7fcc6a07)*,* [*NormalViewSetInfoAtom*](#Section_b906d23a45d244a2b486545f21676ecd)*,* [*NoZoomViewInfoAtom*](#Section_377e8d7886934fecb31caa890909f4b3)*,* [*ParaBuildAtom*](#Section_8eeb2908927340e8bb4330d07220ba58)*,* [*PhotoAlbumInfo10Atom*](#Section_2782f287ec64433182bc63fb6eb8c98e)*,* [*PrintOptionsAtom*](#Section_38013adecfee4bbda443d84822a80173)*,* [*SlideViewInfoAtom*](#Section_bb7145715b154cd8a28c4437c4e1ad15)*,* [*TimeScaleBehaviorAtom*](#Section_4e1b5b50334d4aa5a00c4d95f087b148)*,* [*TimeVariantBool*](#Section_c8267defadc64a0c9f6dc9d2498ab9d5)*,* [*ZoomViewInfoAtom*](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c)

A 1-byte unsigned integer that specifies a Boolean value. It SHOULD be 0x00 or 0x01. A value of 0x00 specifies **FALSE** and all other values specify **TRUE**.

### BulletSize

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

A 2-byte signed integer that specifies the bullet font size. It SHOULD[<5>](#Appendix_A_5" \o "Product behavior note 5) be a value from the following table:

| Range | Meaning |
| --- | --- |
| 25 to 400, inclusive. | The value specifies bullet font size as a percentage of the font size of the first text run in the paragraph. |
| -4000 to -1, inclusive. | The absolute value specifies the bullet font size in [**points**](#gt_d072e4da-7898-4227-8f25-9fe77db43571). |

### char2

*Referenced by:* [*BookmarkEntityAtom*](#Section_a2f2dfbe96e6466eb37b3310416a47ec)*,* [*FontEntityAtom*](#Section_b5946b702fbc4f7ba119b31fcbeb1794)*,* [*RTFDateTimeMCAtom*](#Section_7aa3736d15cf43b38b450dddf856d946)*,* [*SlideShowDocInfoAtom*](#Section_6d266473cadd49ada3cb9f3601365b9e)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string. The Unicode **NULL** character (0x0000), if present, terminates the string.

### ExHyperlinkId

*Referenced by:* [*ExHyperlinkAtom*](#Section_c760a33c472f449cb1db5dc5fe59ace1)

A 4-byte unsigned integer that specifies an identifier for a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e). It MUST be greater than 0x00000000. The combined set of **ExObjId** (section [2.2.7](#Section_de24f7263ecb492d901b568a57c02eb4)) and **ExHyperlinkId** values in the file MUST NOT contain duplicates.

### ExHyperlinkIdRef

*Referenced by:* [*ExHyperlinkRefAtom*](#Section_37fa88095b274f9e95a669b633d191ea)*,* [*InteractiveInfoAtom*](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7)

A 4-byte unsigned integer that specifies a reference to a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e). It MUST be 0x00000000 or equal to the value of the **exHyperlinkId** field of an **ExHyperlinkAtom** record (section [2.10.17](#Section_c760a33c472f449cb1db5dc5fe59ace1)). The value 0x00000000 specifies a **null** reference.

### ExObjId

*Referenced by:* [*ExMediaAtom*](#Section_3239ce9f932f4e4f8299333e907a6ccc)*,* [*ExOleObjAtom*](#Section_a35170168e3245859a42adae02eea798)

A 4-byte unsigned integer that specifies an identifier for an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d). It MUST be greater than 0x00000000. The combined set of **ExObjId** and **ExHyperlinkId** (section [2.2.5](#Section_42b7d88ae81644a385baad5586c7470e)) values in the file MUST NOT contain duplicates.

### ExObjIdRef

*Referenced by:* [*ExObjRefAtom*](#Section_d6e17fee7d53453f962bb671a4f8869f)

A 4-byte unsigned integer that specifies a reference to an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d). It MUST be equal to the value of the **exObjId** field of an **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) or the value of the **exObjId** field of an **ExOleObjAtom** record (section [2.10.12](#Section_a35170168e3245859a42adae02eea798)).

### FileOrDirNameFragment

*Referenced by:* [*BCBroadcastDateTimeAtom*](#Section_559aeb29dff8469780778f6a81f8e02b)*,* [*BCPresentationNameAtom*](#Section_2e98de7a7bb14660aac57b7cc6b5fca0)*,* [*BCUserNameAtom*](#Section_35dcadecfa5b43cbb611a77144bf576f)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string that specifies a valid file name or directory name. See [[MSDN-FILE]](https://go.microsoft.com/fwlink/?LinkId=90004) for more information about file naming.

### FontIndexRef

*Referenced by:* [*TextCFException*](#Section_c75024a214cb4d7d9964bdab2fcd9d93)*,* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

A 2-byte unsigned integer that specifies a zero-based index of a font within the collection of fonts specified by the **FontCollectionContainer** record (section [2.9.8](#Section_88da04bf68384f879a87adf067543837)).

### FontIndexRef10

*Referenced by:* [*TextCFException10*](#Section_77fea531e8394bc9b8137adc3f2adea0)

A 2-byte unsigned integer that specifies a zero-based index of a font within the collection of fonts specified by the **FontCollection10Container** record (section [2.9.11](#Section_8c62fed6394f4c49ae8aa73c2a8026d1)).

### HttpUrl

*Referenced by:* [*BCChatUrlAtom*](#Section_c8b8114bc07849078613e759997bb455)*,* [*SlideLibUrlAtom*](#Section_4f0d845d959e4deea2d7a4701a51a0b9)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string. It MUST be a valid URI [[RFC3986]](https://go.microsoft.com/fwlink/?LinkId=90453) with the HTTP scheme.

### IndentLevel

*Referenced by:* [*MasterTextPropRun*](#Section_1454a4e7ef70445588261652b46394dd)*,* [*TextPFRun*](#Section_4e95a4f9a9af42b5b81af8f991cb1418)

A 2-byte unsigned integer that specifies a text paragraph indent level. It MUST be less than or equal to 0x0004.

### MachineName

*Referenced by:* [*BCNetShowServerNameAtom*](#Section_794f6bfb3a6242fe997c299758084615)*,* [*BCRexServerNameAtom*](#Section_4a10f915e5434368811fd601ead00716)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string that specifies a [**computer name**](#gt_9a7bc8b3-3374-4608-8f73-be20a90b898b). See [[MSDN-FILE]](https://go.microsoft.com/fwlink/?LinkId=90004) for more information about computer naming.

### MarginOrIndent

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)*,* [*TextRuler*](#Section_36b5f25afd5d4db18735dcb06a84fe30)

A 2-byte signed integer that specifies an offset in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb). The origin of the offset is specified at each use of this **MarginOrIndent** type.

### MasterId

*Referenced by:* [*MasterPersistAtom*](#Section_ffcca362b8604a3d900e5c03f02c1775)

A 4-byte unsigned integer that specifies an identifier for a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). It MUST be greater than or equal to 0x80000000. The set of **MasterId** values in the file MUST NOT contain duplicates.

### MasterIdRef

*Referenced by:* [*SlideAtom*](#Section_57e11e6ce5504c4380b672731eee8abd)

A 4-byte unsigned integer that specifies a reference to a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). It MUST be 0x00000000 or equal to the value of the **masterId** field of a **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)). The value 0x00000000 specifies a **null** reference.

### NotesId

*Referenced by:* [*NotesPersistAtom*](#Section_b595ad14a46c4fccb4bd7298712043a4)

A 4-byte unsigned integer that specifies an identifier for a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65). It MUST be greater than or equal to 0x00000100 and MUST be less than or equal to 0x7FFFFFFF. The set of **NotesId** values in the file MUST NOT contain duplicates.

### NotesIdRef

*Referenced by:* [*SlideAtom*](#Section_57e11e6ce5504c4380b672731eee8abd)

A 4-byte unsigned integer that specifies a reference to a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65). It MUST be 0x00000000 or equal to the value of the **notesId** field of a **NotesPersistAtom** record (section [2.4.14.7](#Section_b595ad14a46c4fccb4bd7298712043a4)). The value 0x00000000 specifies a **null** reference.

### ParaSpacing

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

A 2-byte signed integer that specifies text paragraph spacing. It MUST be a value from the following table:

| Range | Meaning |
| --- | --- |
| 0 to 13200, inclusive. | The value specifies spacing as a percentage of the text line height. |
| Less than 0. | The absolute value specifies spacing in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb). |

### PersistIdRef

*Referenced by:* [*DocumentAtom*](#Section_121f272834974a0a829e6f416fee2ee6)*,* [*ExOleObjAtom*](#Section_a35170168e3245859a42adae02eea798)*,* [*MasterPersistAtom*](#Section_ffcca362b8604a3d900e5c03f02c1775)*,* [*NotesPersistAtom*](#Section_b595ad14a46c4fccb4bd7298712043a4)*,* [*SlidePersistAtom*](#Section_48dce41296924f93aeb73d9fdd3a0a5a)*,* [*UserEditAtom*](#Section_3ffb3fab95de487398aad508fbbac981)*,* [*VBAInfoAtom*](#Section_93d20ef2151443f9901c50c56d3a3073)

A 4-byte unsigned integer that specifies a reference to a [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68). It MUST be 0x00000000 or equal to a [**persist object identifier**](#gt_f59810ad-9495-4236-817d-420613003d53) specified by a **PersistDirectoryAtom** record (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)). The value 0x00000000 specifies a **null** reference.

### PrintableAnsiString

*Referenced by:* [*CurrentUserAtom*](#Section_940d5700e4d74fc0ab48fed5dbc48bc1)*,* [*DocRoutingSlipString*](#Section_36c239f5e4d84c66b35a75d1bfec5bac)

An array of bytes that specifies an ANSI string. It MUST NOT contain the following characters:

0x00 - 0x1F

0x7F - 0x9F

The ANSI **NULL** character (0x00), if present, terminates the string.

### PrintableUnicodeString

*Referenced by:* [*AuthorNameAtom*](#Section_7b27b62888e14066b7778b6fe9f43ae1)*,* [*BCContactAtom*](#Section_2c5c4e52addc40249d72817236b04f86)*,* [*BCEmailAddressAtom*](#Section_d01fcb8e7c574d7aa8e3c906e8afcd6f)*,* [*BCEmailNameAtom*](#Section_1305677b209947069db3eb4133841122)*,* [*BCSpeakerAtom*](#Section_813f0adc905c479293646eb4084ee5f1)*,* [*BookmarkValueAtom*](#Section_4dc746d99d91462396eaa1256e728534)*,* [*ClipboardNameAtom*](#Section_203232fa72dd465b81cd48cda50d3865)*,* [*Comment10AuthorAtom*](#Section_e6a12f24381941caa4c6df5065ca75ec)*,* [*Comment10AuthorInitialAtom*](#Section_e4516e96f95c43589e69c7e58ef19061)*,* [*CopyrightAtom*](#Section_9d4029f9d39c4f59910ada60d75c46db)*,* [*CurrentUserAtom*](#Section_940d5700e4d74fc0ab48fed5dbc48bc1)*,* [*FileNameAtom*](#Section_2b13333268de4f7ab42d96bc0f130818)*,* [*FooterAtom*](#Section_be36887533e9490db832954eb800a240)*,* [*HeaderAtom*](#Section_bdda477db94d4a4ebe1c35f78f68821c)*,* [*KeywordsAtom*](#Section_a549e2ed7f644b4a927ea22e76ffd213)*,* [*MacroNameAtom*](#Section_7f850503c5444c8798172f1368632b70)*,* [*ModifyPasswordAtom*](#Section_6d703306994647f4b206794ddb90585f)*,* [*NamedShowAtom*](#Section_5962eaa99cc04996b9020b4477790727)*,* [*NamedShowNameAtom*](#Section_41443c4148f440d58ec7e9306d25545c)*,* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)*,* [*PP10ShapeBinaryTagExtension*](#Section_a5850b953d584723b94902c802af528d)*,* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)*,* [*PP11DocBinaryTagExtension*](#Section_662c3a59f11d4d3fb472c695b4e598a8)*,* [*PP11ShapeBinaryTagExtension*](#Section_ab3d45de5d374cd69bece6983b085ad9)*,* [*PP12DocBinaryTagExtension*](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7)*,* [*PP12SlideBinaryTagExtension*](#Section_1d1704d76e3e472296c70fbe7ca8f682)*,* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)*,* [*PP9ShapeBinaryTagExtension*](#Section_288d4b7c200a4fbfbfcbe60adba13db8)*,* [*PP9SlideBinaryTagExtension*](#Section_0ee9570b80ec46f0889aec42dad58baf)*,* [*ProgIDAtom*](#Section_4bfdd228254e40aba4970e0407079fd0)*,* [*ReviewerNameAtom*](#Section_5aa53fdfa0794ce2a27fa1af7106a427)*,* [*ServerIdAtom*](#Section_b008a1461e9e4e4aa0a39a6dd55bbf8a)*,* [*SoundNameAtom*](#Section_f593b2eb8e414e02aed5143e2f109497)*,* [*TagNameAtom*](#Section_274ba042a7134d939542cc31967c0857)*,* [*UserDateAtom*](#Section_59b1690f1aea4b12846f3a1bec342425)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string. It MUST NOT contain the following characters:

* 0x0000 - 0x001F
* 0x007F - 0x009F

The Unicode **NULL** character (0x0000), if present, terminates the string.

### SlideId

*Referenced by:* [*SlidePersistAtom*](#Section_48dce41296924f93aeb73d9fdd3a0a5a)

A 4-byte unsigned integer that specifies an identifier for a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192). It MUST be greater than or equal to 0x00000100 and MUST be less than or equal to 0x7FFFFFFF. The set of **SlideId** values in the file MUST NOT contain duplicates.

### SlideIdRef

*Referenced by:* [*ExControlAtom*](#Section_0a31df487ebb461a967e42003b8e91bd)*,* [*ExOleLinkAtom*](#Section_d14ae8e499c34847941c7d7c258f7691)*,* [*LinkedSlide10Atom*](#Section_2a277bb42dbe493494c1004b7122ce4d)*,* [*NamedShowSlidesAtom*](#Section_b90394d690dd4557900ec250d1bfc4f9)*,* [*NotesAtom*](#Section_9bb3e3521014477bb286cd43127c3b74)*,* [*OutlineTextPropsHeaderExAtom*](#Section_e75ff2cccd874d2e843a3fcaa4440b96)*,* [*SlideListEntry10Atom*](#Section_29e7a9d4974845d6abaa921772ca43a3)*,* [*UserEditAtom*](#Section_3ffb3fab95de487398aad508fbbac981)

A 4-byte unsigned integer that specifies a reference to a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192). It MUST be 0x00000000 or equal to the value of the **slideId** field of a **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)). The value 0x00000000 specifies a **null** reference.

### SmartTagIndex

*Referenced by:* [*SmartTags*](#Section_30a82ae1f03e405790d5fe1c7e69b744)

A 4-byte unsigned integer that specifies a zero-based index of a [**smart tag**](#gt_2f57a49a-d503-4605-8798-0e53bd637609) within the collection of smart tags specified by the **SmartTagStore11Container** record (section [2.11.28](#Section_f6735fdfc53746fb82dfb509a9d80faa)).

### SoundIdRef

*Referenced by:* [*AnimationInfoAtom*](#Section_4361cc1fcd514e61a451d252bf8e1069)*,* [*ExWAVAudioEmbeddedAtom*](#Section_abc3f20816ed4945a8443eec428cc780)*,* [*InteractiveInfoAtom*](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7)*,* [*SlideShowSlideInfoAtom*](#Section_10dc4455c5d8472086468cde8644a040)*,* [*VisualSoundAtom*](#Section_8cf2f3366e294368b5f1a21e8779f3af)

A 4-byte unsigned integer that specifies a reference to a sound. It MUST be 0x00000000 or equal to the integer value of the **soundIdAtom** field of a **SoundContainer** record (section [2.4.16.3](#Section_8c5498fa18324659a02bd23e28ef21b3)). The value 0x00000000 specifies a **null** reference.

### TabCrLfPrintableUnicodeString

*Referenced by:* [*Comment10TextAtom*](#Section_509e23de68384693b586dace9899c2c8)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string. It MUST NOT contain the following characters:

* 0x0000 - 0x0008
* 0x000B
* 0x000C
* 0x000E - 0x001F
* 0x007F - 0x009F

The Unicode **NULL** character (0x0000), if present, terminates the string.

### TabSize

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)*,* [*TextRuler*](#Section_36b5f25afd5d4db18735dcb06a84fe30)

A 2-byte signed integer that specifies the size, in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb), of a tab.

### TextPosition

*Referenced by:* [*DateTimeMCAtom*](#Section_668ab84bf0b24496af11b9d1b04e840a)*,* [*FooterMCAtom*](#Section_5a2fa1e2bc5f450b89d0b372a811313a)*,* [*GenericDateMCAtom*](#Section_a212a37760444ec2a5948c59be237125)*,* [*HeaderMCAtom*](#Section_d7ed28bf83ef45e5a57b2384f8b03423)*,* [*RTFDateTimeMCAtom*](#Section_7aa3736d15cf43b38b450dddf856d946)*,* [*SlideNumberMCAtom*](#Section_3f61519995ec48c0acb4dd98f0f29560)*,* [*TextBookmarkAtom*](#Section_5eeac20cc3cc45a789185a96c9f394a1)*,* [*TextRange*](#Section_7bdc8284595a40c29a2f5245c1fda304)

A 4-byte signed integer that specifies a zero-based character position in a range of text. It MUST be greater than or equal to 0x00000000, and MUST be less than the character length of the *corresponding text*.

Let the *corresponding text* be as specified at each use of this **TextPosition** type.

### TxLCID

*Referenced by:* [*TextSIException*](#Section_c4be3fe8ac2d42b485bb2647078f4c53)

A 2-byte unsigned integer that specifies a language identifier. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0000 | No language. |
| 0x0013 | Any Dutch language is preferred over non-Dutch languages when proofing the text. |
| 0x0400 | No proofing is performed on the text. |
| Greater than 0x0400 | A valid LCID as specified by [[MS-LCID]](%5bMS-LCID%5d.pdf#Section_70feba9f294e491eb6eb56532684c37f). |

### UncOrLocalPath

*Referenced by:* [*BCArchiveDirAtom*](#Section_cfc1123f2cae404789d19f70b21c7d37)*,* [*UncOrLocalPathAtom*](#Section_b376f887227b4f538600fa036403ce05)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string that specifies a [**UNC**](#gt_c9507dca-291d-4fd6-9cba-a9ee7da8c908) or local file system path. See [[MSDN-FILE]](https://go.microsoft.com/fwlink/?LinkId=90004) for more information about file naming.

### UncPath

*Referenced by:* [*BCAsdFileNameAtom*](#Section_b7946e738685414aae7bb6aaa9011808)*,* [*BCNetShowFilesBaseDirAtom*](#Section_6c370c4420db41d687ce9cd5cfdb03bb)*,* [*BCNetShowFilesDirAtom*](#Section_3029ca8ef20642db97c961fa0b6a8673)*,* [*BCPptFilesBaseDirAtom*](#Section_3e60a89e381c41a581e6488d7a0fb58c)*,* [*BCPptFilesDirAtom*](#Section_86cd0cd5cc864029ad7d6fd3b90ecf04)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string that specifies a [**UNC**](#gt_c9507dca-291d-4fd6-9cba-a9ee7da8c908) path. See [[MSDN-FILE]](https://go.microsoft.com/fwlink/?LinkId=90004) for more information about file naming.

### UncPathOrHttpUrl

*Referenced by:* [*BCPptFilesBaseUrlAtom*](#Section_b43dce86be6042cda1cec6d7bd9b9c06)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string that specifies a [**UNC**](#gt_c9507dca-291d-4fd6-9cba-a9ee7da8c908) path or a valid URI [[RFC3986]](https://go.microsoft.com/fwlink/?LinkId=90453) with the HTTP scheme. See [[MSDN-FILE]](https://go.microsoft.com/fwlink/?LinkId=90004) for more information about file naming.

### UnicodeString

*Referenced by:* [*BCDescriptionAtom*](#Section_ec0f01d0a3b3455eae9b2442a78c67f7)*,* [*BCEntryIDAtom*](#Section_87a49d205b7640cba4df1cbd507c42fe)*,* [*BCTitleAtom*](#Section_b23020bf56be4dcbac021f5c1810a9fe)*,* [*FriendlyNameAtom*](#Section_e8e62224b3be43b9b97a658257d6af67)*,* [*LocationAtom*](#Section_6c05ffebaacd422bb931ec7b3e8b1ee3)*,* [*MenuNameAtom*](#Section_39e69a141c4649deaab4ac78485c6de1)*,* [*ScreenTipAtom*](#Section_d2e1c18127b841e088ef702c287fda1b)*,* [*SlideNameAtom*](#Section_3b52355ff13f4a20b967be4b42dc6ac5)*,* [*TagValueAtom*](#Section_11f5be351e644038bd7e6e6248f0b43f)*,* [*TargetAtom*](#Section_6a84616800154544a3c345f56e9577d8)*,* [*TemplateNameAtom*](#Section_cebe780b49ee491b81a10f90d3872e03)*,* [*TimeEventFilter*](#Section_a4433ce8d99e43a6999c1387161c610d)*,* [*TimeNodeTimeFilter*](#Section_41a5d8b9c0014fecaf559903e8a7a482)*,* [*TimePointsTypes*](#Section_1656e976a2c14a19a9e9dccd516f24af)*,* [*TimeRuntimeContext*](#Section_4c48cb5aae834962a0ac994008e08193)*,* [*TimeVariantString*](#Section_c53f2602385449249a6349400ec6255c)

An array of bytes that specifies a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string. The Unicode **NULL** character (0x0000), if present, terminates the string.

### Utf8UnicodeString

*Referenced by:* [*RoundTripColorMappingAtom*](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a)

An array of bytes that specifies a UTF-8 Unicode [[RFC3629]](https://go.microsoft.com/fwlink/?LinkId=90439) string. It MUST be valid XML as defined in [[XML10/5]](https://go.microsoft.com/fwlink/?LinkId=221669).

## File Structure Types

### RecordHeader

A structure at the beginning of each [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) and each [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) in the file. The values in the record header and the context of the record are used to identify and interpret the record data that follows.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| recVer | | | | recInstance | | | | | | | | | | | | recType | | | | | | | | | | | | | | | |
| recLen | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**recVer (4 bits):** An unsigned integer that specifies the version of the record data that follows the record header. A value of 0xF specifies that the record is a container record.

**recInstance (12 bits):** An unsigned integer that specifies the record instance data. Interpretation of the value is dependent on the particular record type.

**recType (2 bytes):** A **RecordType** enumeration (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)) that specifies the type of the record data that follows the record header.

**recLen (4 bytes):** An unsigned integer that specifies the length, in bytes, of the record data that follows the record header.

### CurrentUserAtom

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the last user to modify the file and where the most recent [**user edit**](#gt_7d9321a6-b9a8-4481-87be-58d6389acc0e) is located. This is the only record in the **Current User Stream** (section [2.1.1](#Section_76cfa65707a6464b81ab4c017c611f64)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| size | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| headerToken | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| offsetToCurrentEdit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lenUserName | | | | | | | | | | | | | | | | docFileVersion | | | | | | | | | | | | | | | |
| majorVersion | | | | | | | | minorVersion | | | | | | | | unused | | | | | | | | | | | | | | | |
| ansiUserName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| relVersion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unicodeUserName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CurrentUserAtom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**size (4 bytes):** An unsigned integer that specifies the length, in bytes, of the fixed-length portion of the record, which begins after the **rh** field and ends before the **ansiUserName** field. It MUST be 0x00000014.

**headerToken (4 bytes):** An unsigned integer that specifies a token used to identify whether the file is encrypted. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0xE391C05F | The file SHOULD NOT[<6>](#Appendix_A_6" \o "Product behavior note 6) be an [**encrypted document**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220). |
| 0xF3D1C4DF | The file MUST be an encrypted document. |

**offsetToCurrentEdit (4 bytes):** An unsigned integer that specifies an offset, in bytes, from the beginning of the **PowerPoint Document Stream** (section [2.1.2](#Section_1fc22d5628f94818bd4567c2bf721ccf)) to the **UserEditAtom** record (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)) for the most recent user edit.

**lenUserName (2 bytes):** An unsigned integer that specifies the length, in bytes, of the **ansiUserName** field. It MUST be less than or equal to 255.

**docFileVersion (2 bytes):** An unsigned integer that specifies the document file version of the file. It MUST be 0x03F4.

**majorVersion (1 byte):** An unsigned integer that specifies the major version of the storage format. It MUST be 0x03.

**minorVersion (1 byte):** An unsigned integer that specifies the minor version of the storage format. It MUST be 0x00.

**unused (2 bytes):** Undefined and MUST be ignored.

**ansiUserName (variable):** A **PrintableAnsiString** (section [2.2.22](#Section_bcde30fd302f4bf8abf4963b87ad40b3)) that specifies the user name of the last user to modify the file. The length, in bytes, of the field is specified by the **lenUserName** field.

**relVersion (4 bytes):** An unsigned integer that specifies the release version of the file format. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000008 | The file contains one or more [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). |
| 0x00000009 | The file contains more than one main master slide. It SHOULD NOT[<7>](#Appendix_A_7" \o "Product behavior note 7) be used. |

**unicodeUserName (variable):** An optional **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the user name of the last user to modify the file. The length, in bytes, of the field is specified by 2 \* **lenUserName**. This user name supersedes that specified by the **ansiUserName** field. It MAY[<8>](#Appendix_A_8" \o "Product behavior note 8) be omitted.

### UserEditAtom

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about a [**user edit**](#gt_7d9321a6-b9a8-4481-87be-58d6389acc0e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lastSlideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| version | | | | | | | | | | | | | | | | minorVersion | | | | | | | | majorVersion | | | | | | | |
| offsetLastEdit | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| offsetPersistDirectory | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| docPersistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| persistIdSeed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lastView | | | | | | | | | | | | | | | | unused | | | | | | | | | | | | | | | |
| encryptSessionPersistIdRef (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_UserEditAtom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x0000001C or 0x00000020. |

**lastSlideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies the last slide viewed, if this is the last **UserEditAtom** record in the **PowerPoint Document Stream** (section [2.1.2](#Section_1fc22d5628f94818bd4567c2bf721ccf)). In all other cases the value of this field is undefined and MUST be ignored.

**version (16 bits):** An unsigned integer that specifies a build version of the executable that wrote the file. It SHOULD[<9>](#Appendix_A_9" \o "Product behavior note 9) be 0x0000 and MUST be ignored.

**minorVersion (8 bits):** An unsigned integer that specifies the minor version of the storage format. It MUST be 0x00.

**majorVersion (8 bits):** An unsigned integer that specifies the major version of the storage format. It MUST be 0x03.

**offsetLastEdit (4 bytes):** An unsigned integer that specifies an offset, in bytes, from the beginning of the **PowerPoint Document Stream** to a **UserEditAtom** record for the previous user edit. It MUST be less than the offset, in bytes, of this **UserEditAtom** record. The value 0x00000000 specifies that no previous user edit exists.

**offsetPersistDirectory (4 bytes):** An unsigned integer that specifies an offset, in bytes, from the beginning of the **PowerPoint Document Stream** to the **PersistDirectoryAtom** record (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)) for this user edit. It MUST be greater than **offsetLastEdit** and less than the offset, in bytes, of this **UserEditAtom** record.

**docPersistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of the **DocumentContainer** record (section [2.4.1](#Section_6254c4d152174e16b20dc04ddcce31c9)). It MUST be 0x00000001.

**persistIdSeed (4 bytes):** An unsigned integer that specifies a [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) for creating a new [**persist object identifier**](#gt_f59810ad-9495-4236-817d-420613003d53). It MUST be greater than or equal to all persist object identifiers in the file as specified by the **PersistDirectoryAtom** records.

**lastView (2 bytes):** A **ViewTypeEnum** enumeration (section [2.13.42](#Section_cba11b78dfcd451e81cdbf080175e314)) that specifies the last view used to display the file.

**unused (2 bytes):** Undefined and MUST be ignored.

**encryptSessionPersistIdRef (4 bytes):** An optional **PersistIdRef** that specifies the value to look up in the persist object directory to find the offset of the **CryptSession10Container** record (section [2.3.7](#Section_b096333444084621879aef9c54551fd8)). It MAY[<10>](#Appendix_A_10" \o "Product behavior note 10) be omitted. It MUST exist if the document is an [**encrypted document**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220).

### PersistDirectoryAtom

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1). Each [**persist object identifier**](#gt_f59810ad-9495-4236-817d-420613003d53) specified MUST be unique in that persist object directory.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgPersistDirEntry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_PersistDirectoryAtom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**rgPersistDirEntry (variable):** An array of **PersistDirectoryEntry** structures (section [2.3.5](#Section_6214b5a67ca24a868a0e5fd3d3eff1c9)) that specifies persist object identifiers and stream offsets to [**persist objects**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68). The size, in bytes, of the array is specified by **rh.recLen**.

### PersistDirectoryEntry

*Referenced by:* [*PersistDirectoryAtom*](#Section_d10a093d860f409cb065aeb24b830505)

A structure that specifies a compressed table of sequential [**persist object identifiers**](#gt_f59810ad-9495-4236-817d-420613003d53) and stream offsets to associated [**persist objects**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68).

Let the *corresponding user edit* be specified by the **UserEditAtom** record (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)) that most closely follows the **PersistDirectoryAtom** record (section 2.3.4) that contains this structure.

Let the *corresponding persist object directory* be specified by the **PersistDirectoryAtom** record that contains this structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| persistId | | | | | | | | | | | | | | | | | | | | cPersist | | | | | | | | | | | |
| rgPersistOffset (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**persistId (20 bits):** An unsigned integer that specifies a starting persist object identifier. It MUST be less than or equal to 0xFFFFE. The first entry in **rgPersistOffset** is associated with **persistId.** The next entry, if present, is associated with **persistId** plus 1. Each entry in **rgPersistOffset** is associated with a persist object identifier in this manner, with the final entry associated with persistId + cPersist – 1.

**cPersist (12 bits):** An unsigned integer that specifies the count of items in **rgPersistOffset**. It MUST be greater than or equal to 0x001.

**rgPersistOffset (variable):** An array of **PersistOffsetEntry** (section [2.3.6](#Section_a056484a21324e1eaa546e387f9695cf)) that specifies stream offsets to persist objects. The count of items in the array is specified by **cPersist**. The value of each item MUST be greater than or equal to **offsetLastEdit** in the *corresponding user edit* and MUST be less than the offset, in bytes, of the *corresponding persist object directory*.

### PersistOffsetEntry

*Referenced by:* [*PersistDirectoryEntry*](#Section_6214b5a67ca24a868a0e5fd3d3eff1c9)

An unsigned 4-byte integer that specifies an offset, in bytes, from the beginning of the **PowerPoint Document Stream** (section [2.1.2](#Section_1fc22d5628f94818bd4567c2bf721ccf)) to a [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68).

### CryptSession10Container

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies encryption properties for the file.

Only the Office Binary Document RC4 CryptoAPI encryption method as specified in [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 2.3.5 is supported.

The following conditions MUST apply for the **Current User Stream** (section [2.1.1](#Section_76cfa65707a6464b81ab4c017c611f64)) of an encrypted file:

* The stream MUST NOT be encrypted.
* The **headerToken** field of the **CurrentUserAtom** record (section [2.3.2](#Section_940d5700e4d74fc0ab48fed5dbc48bc1)) SHOULD[<11>](#Appendix_A_11" \o "Product behavior note 11) be equal to 0xF3D1C4DF.

The following conditions MUST apply for the **PowerPoint Document Stream** (section [2.1.2](#Section_1fc22d5628f94818bd4567c2bf721ccf)) of an encrypted file:

* The **UserEditAtom** record (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)) and the **PersistDirectoryAtom** record (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)) MUST NOT be encrypted.
* The **rh** field of this **CryptSession10Container** record MUST NOT be encrypted.
* The **data** field of this **CryptSession10Container** record MUST be encrypted as specified in [MS-OFFCRYPTO] section 2.3.5.1.
* All other parts of the stream MUST be encrypted.
* The stream MUST contain exactly one **UserEditAtom** record.
* The **encryptSessionPersistIdRef** field of the **UserEditAtom** record MUST exist. It MUST refer to a valid [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68), which MUST contain this **CryptSession10Container** record.

The **Pictures Stream** (section [2.1.3](#Section_150a72bc487f467e994e01270dfaf9bf)) MUST be encrypted.

The following conditions MUST apply for the **Summary Info Stream** (section [2.1.4](#Section_dfea964e936f42bb838c3fc19909cc32)) and **Document Summary Info Stream** (section [2.1.5](#Section_abdf642437c44ac0b4cc8cb5aed11497)) of an encrypted file if the **fDocProps** bit is not set in the **data.EncryptionHeader.Flags** field:

* The **Summary Info Stream** MUST NOT exist.
* The **Encrypted Summary Info Stream** (section [2.1.6](#Section_8faaf589abed4d79a758529ce59dfcfd)) MUST exist.
* The **Document Summary Info Stream** SHOULD exist but MUST be empty.

If the **fDocProps** bit is set in the **data.EncrytionHeader.Flags** field, the **Summary Info Stream** and **Document Summary Info Stream** MUST NOT be encrypted and MUST contain the same content as the unencrypted file.

Encrypted parts of an [**encrypted document**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220) MUST be decrypted according to the following rules:

* A password hash MUST be generated from a password and the **data.EncryptionVerifier.Salt** field as specified in [MS-OFFCRYPTO] section 2.3.5.5.
* The password MUST be the same as the password which was used to encrypt the file.
* For each block number the derived encryption key MUST be generated from the password hash and the block number as specified in [MS-OFFCRYPTO] section 2.3.5.2.
* The corresponding derived encryption key MUST be used to decrypt the data.

A persist object in the **PowerPoint Document Stream** is decrypted as follows:

* For a persist object, the block number for the derived encryption key is the [**persist object identifier**](#gt_f59810ad-9495-4236-817d-420613003d53).
* The derived encryption key for a persist object MUST be generated from the password hash and the persist object identifier.
* The range of bytes of the persist object that MUST be decrypted using the derived encryption key is specified by:
  + The file offset of the persist object as specified in the **PowerPoint Document Stream** section.
  + The length in bytes which is 8 + the **recLen** field of the **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) at the file offset.
* After decrypting, the range of bytes conforms to the content as specified by this document.

A picture in the **Pictures Stream** is decrypted as follows:

For each field of an **OfficeArtBStoreContainerFileBlock** record as specified in [[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.22 the following decryption steps apply:

* The derived encryption key MUST be generated from the password hash and a block number equal to zero.
* The size of each field in bytes MUST be decrypted with the derived encryption key.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CryptSession10Container** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**data (variable):** An **EncryptionHeader** record as specified in [MS-OFFCRYPTO] section 2.3.5.1. The length, in bytes, of the field is specified by **rh.recLen.**

## Document Types

### DocumentContainer

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about the document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| documentAtom (48 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exObjList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| documentTextInfo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundCollection (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| drawingGroup (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| masterList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| docInfoList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideHF (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesHF (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideShowDocInfoAtom (88 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShows (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| summary (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| docRoutingSlipAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| printOptionsAtom (13 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | rtCustomTableStylesAtom1 (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| endDocumentAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rtCustomTableStylesAtom2 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_Document** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)) |

**documentAtom (48 bytes):** A **DocumentAtom** record (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)) that specifies size information for [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) and [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

**exObjList (variable):** An optional **ExObjListContainer** record (section [2.10.1](#Section_3b997d4d79514478acc51c9adbc2627a)) that specifies the list of [**external objects**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d) in the document.

**documentTextInfo (variable):** A **DocumentTextInfoContainer** record (section [2.9.1](#Section_6a08728e04f84cc1831773cefa178870)) that specifies the default text styles for the document.

**soundCollection (variable):** An optional **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)) that specifies the list of sounds in the file.

**drawingGroup (variable):** A **DrawingGroupContainer** record (section [2.4.3](#Section_1daf91b135314e55ba6a2e271de975c0)) that specifies drawing information for the document.

**masterList (variable):** A **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)) that specifies the list of [**main master slides**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) and [**title master slides**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e).

**docInfoList (variable):** An optional **DocInfoListContainer** record (section [2.4.4](#Section_f0fed863362f43a0ae7872ae15e56171)) that specifies additional document information.

**slideHF (variable):** An optional **SlideHeadersFootersContainer** record (section [2.4.15.1](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)) that specifies the default [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) information for presentation slides.

**notesHF (variable):** An optional **NotesHeadersFootersContainer** record (section [2.4.15.6](#Section_58fe42d1259e4f809a342567c565125e)) that specifies the default header and footer information for notes slides.

**slideList (variable):** An optional **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)) that specifies the list of presentation slides.

**notesList (variable):** An optional **NotesListWithTextContainer** record (section [2.4.14.6](#Section_55453e3706744703bd8dfcaba335f840)) that specifies the list of notes slides.

**slideShowDocInfoAtom (88 bytes):** An optional **SlideShowDocInfoAtom** record (section [2.6.1](#Section_6d266473cadd49ada3cb9f3601365b9e)) that specifies [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) information for the document.

**namedShows (variable):** An optional **NamedShowsContainer** record (section [2.6.2](#Section_a3d04187565b423f90c637d219781b0c)) that specifies named shows in the document.

**summary (variable):** An optional **SummaryContainer** record (section [2.4.22.3](#Section_446dee5f73d04ea3bc6d04afeadfd6e8)) that specifies [**bookmarks**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c) for the document.

**docRoutingSlipAtom (variable):** An optional **DocRoutingSlipAtom** record (section [2.11.1](#Section_8dbe7f1cb2374383a9931a67e660faf0)) that specifies document routing information.

**printOptionsAtom (13 bytes):** An optional **PrintOptionsAtom** record (section [2.4.12](#Section_38013adecfee4bbda443d84822a80173)) that specifies default print options.

**rtCustomTableStylesAtom1 (variable):** An optional **RoundTripCustomTableStyles12Atom** record (section [2.11.13](#Section_fdb1834fa6d8409f83422152025ae8eb)) that specifies round-trip information for custom table styles.

**endDocumentAtom (8 bytes):** An **EndDocumentAtom** record (section [2.4.13](#Section_ac2a2b3b4ccc4f3ab17252dd742b5475)) that specifies the end of the information for the document.

**rtCustomTableStylesAtom2 (variable):** An optional **RoundTripCustomTableStyles12Atom** record that specifies round-trip information for custom table styles. It MUST NOT exist if **rtCustomTableStylesAtom1** exists.

### DocumentAtom

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the entire document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideSize | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesSize | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| serverZoom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesMasterPersistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| handoutMasterPersistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| firstSlideNumber | | | | | | | | | | | | | | | | slideSizeType | | | | | | | | | | | | | | | |
| fSaveWithFonts | | | | | | | | fOmitTitlePlace | | | | | | | | fRightToLeft | | | | | | | | fShowComments | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_DocumentAtom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000028. |

**slideSize (8 bytes):** A **PointStruct** structure (section [2.12.5](#Section_5faffdc98cdf4bd0a2289a122d01b3f2)) that specifies the dimensions of the [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb). Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **slideSize.x** | Specifies the width. It MUST be greater than or equal to 0x00000240 and less than or equal to 0x00007E00. |
| **slideSize.y** | Specifies the height. It MUST be greater than or equal to 0x00000240 and less than or equal to 0x00007E00. |

**notesSize (8 bytes):** A **PointStruct** structure that specifies the dimensions of the [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) and [**handout slides**](#gt_e15bbb8a-d7cc-4e8e-8d62-98e37e8e187f) in master units. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **notesSize.x** | Specifies the width. It MUST be greater than or equal to 0x00000240 and less than or equal to 0x00007E00. |
| **notesSize.y** | Specifies the height. It MUST be greater than or equal to 0x00000240 and less than or equal to 0x00007E00. |

**serverZoom (8 bytes):** A **RatioStruct** structure (section [2.12.6](#Section_32cd4da38d474599ace5d608331e1214)) that specifies a zoom level for visual representations of the document in [**Object Linking and Embedding (OLE)**](#gt_171744b8-3f44-4198-b7b9-1c0147282d2c) scenarios. The ratio specified by this field MUST be greater than zero.

**notesMasterPersistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of a **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) that specifies the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

**handoutMasterPersistIdRef (4 bytes):** A **PersistIdRef** that specifies the value to look up in the persist object directory to find the offset of a **HandoutContainer** record (section [2.5.8](#Section_bf6d1f839023412089c3fb69e49d0212)) that specifies the [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577).

**firstSlideNumber (2 bytes):** An **unsigned integer** that specifies the starting number for numbering slides. It MUST be less than 10000.

**slideSizeType (2 bytes):** A **SlideSizeEnum** enumeration (section [2.13.26](#Section_2e9fc1fd73db465f93e17f975b7f14a6)) that specifies the type of a presentation slide size.

**fSaveWithFonts (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether fonts are embedded in the document.

**fOmitTitlePlace (1 byte):** A **bool1** that specifies whether [**placeholder shapes**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) on the title slide are not displayed.

**fRightToLeft (1 byte):** A **bool1** that specifies whether the user interface displays the document optimized for right-to-left languages.

**fShowComments (1 byte):** A **bool1** that specifies whether [**presentation comments**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9) are displayed.

### DrawingGroupContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies drawing information for the document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OfficeArtDgg (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_DrawingGroup** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**OfficeArtDgg (variable):** An **OfficeArtDggContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.12) that specifies drawing information for the document.

### DocInfoListContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about the document and document display settings.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_List** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**rgChildRec (variable):** An array of **DocInfoListSubContainerOrAtom** records (section [2.4.5](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)) that specifies information about the document or how the document is displayed. The size, in bytes, of the array is specified by **rh.recLen**. The **rh.recType** of the **DocInfoListSubcontainerOrAtom** items MUST be one of the following record types: **RT\_ProgTags** (section 2.13.24), **RT\_NormalViewSetInfo9** (section 2.13.24), **RT\_NotesTextViewInfo9** (section 2.13.24), **RT\_OutlineViewInfo** (section 2.13.24), **RT\_SlideViewInfo** (section 2.13.24), **RT\_SorterViewInfo** (section 2.13.24), or **RT\_VbaInfo** (section 2.13.24). Each record type MUST NOT occur more than once, except for the **RT\_SlideViewInfo** record type, which MUST NOT occur more than twice. If the **RT\_SlideViewInfo** record type occurs twice, one occurrence MUST refer to a **SlideViewInfoContainer** record (section [2.4.21.9](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)) and the other occurrence MUST refer to a **NotesViewInfoContainer** record (section [2.4.21.12](#Section_96636c7591464d128099f0f50e382b71)).

### DocInfoListSubContainerOrAtom

*Referenced by:* [*DocInfoListContainer*](#Section_f0fed863362f43a0ae7872ae15e56171)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| **RT\_ProgTags** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)) | A **DocProgTagsContainer** record (section [2.4.23.1](#Section_6965e9a7d4314707b789081a6a9c7b8f)) that specifies programmable tags containing additional document data. |
| **RT\_NormalViewSetInfo9** (section 2.13.24) | A **NormalViewSetInfoContainer** record (section [2.4.21.2](#Section_5b7a13338de24c50a83838c389db3147)) that specifies display preferences for a view optimized for the simultaneous display of all [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192), a specific presentation slide, and the text of the [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) associated with that specific presentation slide. |
| **RT\_NotesTextViewInfo9** (section 2.13.24) | A **NotesTextViewInfoContainer** record (section [2.4.21.4](#Section_caacc34d988c4cbc99f7a4bdf808e723)) that specifies display preferences for a view optimized for the display of the text on the notes slides. |
| **RT\_OutlineViewInfo** (section 2.13.24) | A **OutlineViewInfoContainer** record (section [2.4.21.6](#Section_39073741a8dd47bdb94f857a2850ff62)) that specifies display preferences for a view optimized for the display of the text on the presentation slides. |
| **RT\_SlideViewInfo** (section 2.13.24) | A **SlideViewInfoInstance** record (section [2.4.21.8](#Section_b2b53b7fd4c145a9948e3e0e7d168164)) that specifies display preferences for a view optimized for the display of presentation slides or notes slides. |
| **RT\_SorterViewInfo** (section 2.13.24) | A **SorterViewInfoContainer** record (section [2.4.21.13](#Section_7184066996c54d7a9a9aeb5184c1626e)) that specifies display preferences for a view optimized for the simultaneous display of multiple presentation slides. |
| **RT\_VbaInfo** (section 2.13.24) | A **VBAInfoContainer** record (section [2.4.10](#Section_ca0b2c2bb1f8429890bd45296415f0a6)) that specifies [**VBA**](#gt_bc3968c6-4bd2-40a2-8619-5cd7695b3e4f) info for the document. |

### PresAdvisorFlags9Atom

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies which rules to ignore when warning the user about aspects of the document that do not conform to a particular style.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | K | reserved | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_PresentationAdvisorFlags9Atom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000004. |

**A - fDisableCaseStyleTitleRule (1 bit):** A bit that specifies not to warn the user when the letter casing of text in a title [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) does not follow a certain rule.

**B - fDisableCaseStyleBodyRule (1 bit):** A bit that specifies not to warn the user when the letter casing of text in a body placeholder shape does not follow a certain rule.

**C - fDisableEndPunctuationTitleRule (1 bit):** A bit that specifies not to warn the user when the ending punctuation of text in a title placeholder shape does not follow a certain rule.

**D - fDisableEndPunctuationBodyRule (1 bit):** A bit that specifies not to warn the user when the ending punctuation of text in a body placeholder shape does not follow a certain rule.

**E - fDisableTooManyBulletsRule (1 bit):** A bit that specifies not to warn the user when too many bullets are used.

**F - fDisableFontSizeTitleRule (1 bit):** A bit that specifies not to warn the user when the font size in a title placeholder shape exceeds a certain size.

**G - fDisableFontSizeBodyRule (1 bit):** A bit that specifies not to warn the user when the font size in a body placeholder shape exceeds a certain size.

**H - fDisableNumberOfLinesTitleRule (1 bit):** A bit that specifies not to warn the user when the number of lines of text in a title placeholder shape exceeds a certain quantity.

**I - fDisableNumberOfLinesBodyRule (1 bit):** A bit that specifies not to warn the user when the number of lines of a paragraph in a body placeholder shape exceeds a certain quantity.

**J - fDisableTooManyFontsRule (1 bit):** A bit that specifies not to warn the user when the number of different fonts used exceeds a certain quantity.

**K - fDisablePrintTip (1 bit):** A bit that specifies not to advise the user about printing when they first print the document.

**reserved (21 bits):** MUST be zero and MUST be ignored.

### ModifyPasswordAtom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a password used to modify the document.

Files with a modify password MUST be encrypted as specified in [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 2.4.2.3. An application only grants modify access to the presentation if a user provided password matches the **modifyPassword** field.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| modifyPassword (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**modifyPassword (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies a password used to modify the document. The length, in bytes, of the field is specified by **rh.recLen**.

### FilterPrivacyFlags10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies privacy settings.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):**  A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_FilterPrivacyFlags10Atom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000004. |

**A - fRemovePII (1 bit):** A bit that specifies whether personally identifiable information is removed when saving the document.

**reserved (31 bits):** MUST be zero and MUST be ignored.

### PhotoAlbumInfo10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about how to display a presentation as a photo album.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fUseBlackWhite | | | | | | | | fHasCaption | | | | | | | | layout | | | | | | | | unused | | | | | | | |
| frameShape | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_PhotoAlbumInfo10Atom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000006. |

**fUseBlackWhite (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies a user preference for whether to display all pictures in grayscale graphics.

**fHasCaption (1 byte):** A **bool1** that specifies a user preference for whether a text caption exists beneath each picture in the album.

**layout (1 byte):** A **PhotoAlbumLayoutEnum** enumeration (section [2.13.20](#Section_78ebf4895eca4b088feb7c63f69817eb)) that specifies a user preference for the layout of the photos in this presentation.

**unused (1 byte):** Undefined and MUST be ignored.

**frameShape (2 bytes):** A [**PhotoAlbumFrameShapeEnum**](#Section_3a61325ee32e4ccd88c8c0ab2e4cd410) enumeration that specifies a user preference for the shape of the frame around each photo.

### VBAInfoContainer

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**VBA**](#gt_bc3968c6-4bd2-40a2-8619-5cd7695b3e4f) information for the document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| vbaInfoAtom (20 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_VbaInfo** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000014. |

**vbaInfoAtom (20 bytes):** A [VBAInfoAtom](#Section_93d20ef2151443f9901c50c56d3a3073) record that specifies VBA information for this document.

### VBAInfoAtom

*Referenced by:* [*VBAInfoContainer*](#Section_ca0b2c2bb1f8429890bd45296415f0a6)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to the [**VBA**](#gt_bc3968c6-4bd2-40a2-8619-5cd7695b3e4f) project storage.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| persistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fHasMacros | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| version | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x2. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_VbaInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x0000000C. |

**persistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of a **VbaProjectStg** record (section [2.10.40](#Section_6c391284f2e14b90a93f780e6a8519ff)).

**fHasMacros (4 bytes):** An **unsigned integer** that specifies whether the VBA project storage contains data. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | The VBA storage is empty. |
| 0x00000001 | The VBA storage contains data. |

**version (4 bytes):** An unsigned integer that specifies the VBA runtime version that generated the VBA project storage. It MUST be 0x00000002.

### PrintOptionsAtom

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies user preferences for printing the document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| printWhat | | | | | | | | colorMode | | | | | | | | fPrintHidden | | | | | | | | fScaleToFitPaper | | | | | | | |
| fFrameSlides | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_PrintOptionsAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**printWhat (1 byte):** A [**PrintWhatEnum**](#Section_3782bb37ad904ef3aa4bb78ebf578e94) enumeration that specifies what is printed.

**colorMode (1 byte):** A [**ColorModeEnum**](#Section_47630627706e4e86a0ba45ea90837cec) enumeration that specifies how colors are printed.

**fPrintHidden (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether hidden slides are printed.

**fScaleToFitPaper (1 byte):** A **bool1** that specifies whether the [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) is scaled as large as possible to fit the printable area of the page and maintain its aspect ratio.

**fFrameSlides (1 byte):** A **bool1** that specifies whether a border is drawn around each slide.

### EndDocumentAtom

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the end of information for the document inside a **DocumentContainer** record (section 2.4.1).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_EndDocumentAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000000. |

### Slide List Types

#### MasterListWithTextContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of references to [**main master slides**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) and [**title master slides**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgMasterPersistAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be [RT\_SlideListWithText](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgMasterPersistAtom (variable):** An array of **MasterPersistAtom** records (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) that specifies references to the main master slides and title master slides. The length, in bytes, of the array is specified by **rh.recLen**.

#### MasterPersistAtom

*Referenced by:* [*MasterListWithTextContainer*](#Section_18a9bc043307440ebbc2efcb75ee923d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| persistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| masterId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlidePersistAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**persistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) for a main master slide or a **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) for a title master slide.

**A - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**B - fNonOutlineData (1 bit):** A bit that specifies whether the main master slide or title master slide specified by the **persistIdRef** field contains data other than text in a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2).

**reserved2 (29 bits):** MUST be zero and MUST be ignored.

**reserved3 (4 bytes):** MUST be zero and MUST be ignored.

**masterId (4 bytes):** A [MasterId](#Section_fa12046c7ff945418f763ed799dcffc4) that specifies the identifier for the main master slide or title master slide specified by the **persistIdRef** field.

**reserved4 (4 bytes):** MUST be zero and MUST be ignored.

#### SlideListWithTextContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of references to [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) and text-related records for text contained within those presentation slides.

Each **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) in this list references a **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) as specified by the **persistIdRef** field of the **SlidePersistAtom** record. Let the *corresponding slide* be the **SlideContainer** record so specified.

Let the *corresponding text placeholder list* be specified by the sequence of items in the **slideAtom.rgPlaceholderTypes** array of the *corresponding slide* with one of the following values: [PT\_MasterTitle](#Section_dbfd04be077644d9b408b07f4c951eaf), PT\_MasterBody, PT\_MasterCenterTitle, PT\_MasterSubTitle, PT\_Title, PT\_Body, PT\_CenterTitle, PT\_SubTitle, PT\_VerticalTitle, or PT\_VerticalBody.

The ith [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that follows a **SlidePersistAtom** record specifies the text of a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) that corresponds to the ith item in the *corresponding text* placeholder list.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideListWithText](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgChildRec (variable):** An array of [SlideListWithTextSubContainerOrAtom](#Section_fc198575e6fc420f86936714469eb710) records that specifies the references to presentation slides and text contained within those presentation slides. The sequence of the **rh.recType** fields of array items MUST be a valid **SlideListWithTextRecordList** as specified in the following ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:

1. SlideListWithTextRecordList = 1\*SlideRecordList
2. SlideRecordList = RT\_SlidePersistAtom \*8(RT\_TextHeaderAtom TextCharsOrBytesRecord StyleTextPropRecord MetaCharRecordList TextBookmarkRecordList TextSpecialInfoRecord InteractiveRecordList)
3. TextCharsOrBytesRecord = \*1(RT\_TextCharsAtom / RT\_TextBytesAtom)
4. StyleTextPropRecord = \*1RT\_StyleTextPropAtom
5. MetaCharRecordList = \*(RT\_SlideNumberMetaCharAtom / RT\_DateTimeMetaCharAtom / RT\_GenericDateMetaCharAtom / RT\_HeaderMetaCharAtom / RT\_FooterMetaCharAtom / RT\_RtfDateTimeMetaCharAtom)
6. TextBookmarkRecordList = \*RT\_TextBookmarkAtom
7. TextSpecialInfoRecord = \*1RT\_TextSpecialInfoAtom
8. InteractiveRecordList = \*(RT\_InteractiveInfo RT\_TextInteractiveInfoAtom)

#### SlideListWithTextSubContainerOrAtom

*Referenced by:* [*SlideListWithTextContainer*](#Section_307e6d12730447a8acbd3e7b8041ad3c)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_SlidePersistAtom](#Section_38fb1fa50a62477a8b14178df22de812) | A **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) that specifies a reference to a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192). |
| RT\_TextHeaderAtom | A [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that specifies the type of a body of text. |
| RT\_TextCharsAtom | A [TextCharsAtom](#Section_a3c5c8d5e5304167a2427743bc99aeac) record that specifies text characters. |
| RT\_TextBytesAtom | A [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) record that specifies text characters. |
| RT\_StyleTextPropAtom | A [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) record that specifies text character and paragraph properties. |
| RT\_SlideNumberMetaCharAtom | A [SlideNumberMCAtom](#Section_3f61519995ec48c0acb4dd98f0f29560) record that specifies a slide number metacharacter. |
| RT\_DateTimeMetaCharAtom | A [DateTimeMCAtom](#Section_668ab84bf0b24496af11b9d1b04e840a) record that specifies a **datetime** metacharacter. |
| RT\_GenericDateMetaCharAtom | A [GenericDateMCAtom](#Section_a212a37760444ec2a5948c59be237125) record that specifies a **datetime** metacharacter. |
| RT\_HeaderMetaCharAtom | A [HeaderMCAtom](#Section_d7ed28bf83ef45e5a57b2384f8b03423) record that specifies a header metacharacter. |
| RT\_FooterMetaCharAtom | A [FooterMCAtom](#Section_5a2fa1e2bc5f450b89d0b372a811313a) record that specifies a footer metacharacter. |
| RT\_RtfDateTimeMetaCharAtom | A [RTFDateTimeMCAtom](#Section_7aa3736d15cf43b38b450dddf856d946) record that specifies an RTF **datetime** metacharacter. |
| RT\_TextBookmarkAtom | A [TextBookmarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1) record that specifies a text [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c). |
| RT\_TextSpecialInfoAtom | A [TextSpecialInfoAtom](#Section_382afea69dc34b6c820611abef8b8366) record that specifies additional text properties. |
| RT\_InteractiveInfo | An [InteractiveInfoInstance](#Section_9225f32d5eb146b38ebd442bffded30d) record that specifies text interactive information. |
| RT\_TextInteractiveInfoAtom | A [TextInteractiveInfoInstance](#Section_824e7fc09f994135b1f30fbd5597f5fd) record that specifies the anchor for text interactive information. |

#### SlidePersistAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

Let the *corresponding slide* be as specified by the **persistIdRef** field.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| persistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cTexts | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlidePersistAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**persistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) for a presentation slide.

**A - reserved1 (1 bit):** MUST be zero and MUST be ignored.

**B - fShouldCollapse (1 bit):** A **bit** that specifies whether the *corresponding slide* is collapsed.

**C - fNonOutlineData (1 bit):**  A **bit** that specifies whether the *corresponding slide* contains data other than text in a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2).

**reserved2 (29 bits):** MUST be zero and MUST be ignored.

**cTexts (4 bytes):** A **signed integer** that specifies the number of text placeholder shapes on the *corresponding slide*. It MUST be greater than or equal to 0x00000000. It SHOULD be less than or equal to 0x00000005 and MUST be less than or equal to 0x00000008.

**slideId (4 bytes):** A [SlideId](#Section_747d514b9d774a728b61fe226882944c) that specifies the identifier for the *corresponding slide*.

**reserved3 (4 bytes):** MUST be zero and MUST be ignored.

#### NotesListWithTextContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of references to [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgNotesPersistAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be [RT\_SlideListWithText](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgNotesPersistAtom (variable):** An array of **NotesPersistAtom** records (section [2.4.14.7](#Section_b595ad14a46c4fccb4bd7298712043a4)) that specifies references to notes slides. The length, in bytes, of the array is specified by **rh.recLen**.

#### NotesPersistAtom

*Referenced by:* [*NotesListWithTextContainer*](#Section_55453e3706744703bd8dfcaba335f840)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| persistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved3 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlidePersistAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**persistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of the **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) for a notes slide.

**A - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**B - fNonOutlineData (1 bit):** A bit that specifies whether the notes slide specified by the **persistIdRef** field contains data other than text in a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2).

**reserved2 (29 bits):** MUST be zero and MUST be ignored.

**reserved3 (4 bytes):** MUST be zero and MUST be ignored.

**notesId (4 bytes):** A [NotesId](#Section_a2ed19fb4b5b4f938ef9baa2284ecd2b) that specifies the identifier for the notes slide specified by the **persistIdRef** field.

**reserved4 (4 bytes):** MUST be zero and MUST be ignored.

### Header/Footer Types

#### SlideHeadersFootersContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about the [**footers**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) on a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hfAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| userDateAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| footerAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):**  A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be [RT\_HeadersFooters](#Section_38fb1fa50a62477a8b14178df22de812). |

**hfAtom (12 bytes):** A [HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082) record that specifies the options for displaying the footers. The **hfAtom.fHasHeader** sub-field MUST be ignored.

**userDateAtom (variable):** An optional [UserDateAtom](#Section_59b1690f1aea4b12846f3a1bec342425) record that specifies the custom date to be used in the date field.

**footerAtom (variable):** An optional [FooterAtom](#Section_be36887533e9490db832954eb800a240) record that specifies the content of the footer.

#### HeadersFootersAtom

*Referenced by:* [*NotesHeadersFootersContainer*](#Section_58fe42d1259e4f809a342567c565125e)*,* [*PerSlideHeadersFootersContainer*](#Section_0104cfcf37814fbb954d5cd43e2d4e35)*,* [*SlideHeadersFootersContainer*](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies options for displaying [**headers**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footers**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) on a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) or [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| formatId | | | | | | | | | | | | | | | | A | B | C | D | E | F | reserved | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_HeadersFootersAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**formatId (2 bytes):** A signed integer that specifies the format identifier to be used to style the date and time. It MUST be greater than or equal to 0x0000 and less than or equal to 0x000D. It SHOULD[<12>](#Appendix_A_12" \o "Product behavior note 12) be less than or equal to 0x000C. This value is converted into a string as specified by the **index** field of the [DateTimeMCAtom](#Section_668ab84bf0b24496af11b9d1b04e840a) record. It MUST be ignored unless **fHasTodayDate** is **TRUE**.

**A - fHasDate (1 bit):** A bit that specifies whether the date is displayed in the footer.

**B - fHasTodayDate (1 bit):** A bit that specifies whether the current **datetime** is used for displaying the **datetime**.

**C - fHasUserDate (1 bit):** A bit that specifies whether the date specified in [UserDateAtom](#Section_59b1690f1aea4b12846f3a1bec342425) record is used for displaying the **datetime**.

**D - fHasSlideNumber (1 bit):** A bit that specifies whether the slide number is displayed in the footer.

**E - fHasHeader (1 bit):** A bit that specifies whether the header text specified by [HeaderAtom](#Section_bdda477db94d4a4ebe1c35f78f68821c) record is displayed.

**F - fHasFooter (1 bit):** A bit that specifies whether the footer text specified by [FooterAtom](#Section_be36887533e9490db832954eb800a240) record is displayed.

**reserved (10 bits):** MUST be zero and MUST be ignored.

#### UserDateAtom

*Referenced by:* [*NotesHeadersFootersContainer*](#Section_58fe42d1259e4f809a342567c565125e)*,* [*PerSlideHeadersFootersContainer*](#Section_0104cfcf37814fbb954d5cd43e2d4e35)*,* [*SlideHeadersFootersContainer*](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the custom date for use in [**headers**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footers**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| userDate (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**userDate (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the custom date. The length, in bytes, of the field is specified by **rh.recLen**.

#### HeaderAtom

*Referenced by:* [*NotesHeadersFootersContainer*](#Section_58fe42d1259e4f809a342567c565125e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies text to be used in a [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) on a [**handout slide**](#gt_e15bbb8a-d7cc-4e8e-8d62-98e37e8e187f) or [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| header (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**header (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257) ) that specifies the text for the header. The length, in bytes, of the field is specified by **rh.recLen**.

#### FooterAtom

*Referenced by:* [*NotesHeadersFootersContainer*](#Section_58fe42d1259e4f809a342567c565125e)*,* [*PerSlideHeadersFootersContainer*](#Section_0104cfcf37814fbb954d5cd43e2d4e35)*,* [*SlideHeadersFootersContainer*](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies text to be used in a [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) on a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192), [**handout slide**](#gt_e15bbb8a-d7cc-4e8e-8d62-98e37e8e187f) or [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| footer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**footer (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the text for the footer. The length, in bytes, of the field is specified by **rh.recLen**.

#### NotesHeadersFootersContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about the [**headers**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footers**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) on a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hfAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| userDateAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| headerAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| footerAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x004. |
| **rh.recType** | MUST be [RT\_HeadersFooters](#Section_38fb1fa50a62477a8b14178df22de812). |

**hfAtom (12 bytes):** A [HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082) record that specifies the options for displaying the headers and footers.

**userDateAtom (variable):** An optional [UserDateAtom](#Section_59b1690f1aea4b12846f3a1bec342425) record that specifies the custom date to be used in a HeadersFootersAtom record.

**headerAtom (variable):** An optional [HeaderAtom](#Section_bdda477db94d4a4ebe1c35f78f68821c) record that specifies the content of the header.

**footerAtom (variable):** An optional [FooterAtom](#Section_be36887533e9490db832954eb800a240) record that specifies the content of the footer.

### Sound Types

#### SoundCollectionContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies all embedded sounds in the document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundCollectionAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSoundContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x005. |
| **rh.recType** | MUST be [RT\_SoundCollection](#Section_38fb1fa50a62477a8b14178df22de812). |

**soundCollectionAtom (12 bytes):** A [SoundCollectionAtom](#Section_e74f6ee22f184b8e8ba514594f5121ae) record that specifies the [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) for creating new [**sound identifiers**](#gt_716a44b6-1255-4f18-be9d-f2f53dbceacc) for sounds in this collection.

**rgSoundContainer (variable):** An array of **SoundContainer** records (section [2.4.16.3](#Section_8c5498fa18324659a02bd23e28ef21b3)) that specifies the embedded sounds. The length, in bytes, of the array is specified by the following formula:

1. rh.recLen - 12.

#### SoundCollectionAtom

*Referenced by:* [*SoundCollectionContainer*](#Section_8b25294d1485419fa85f48580b8cfbef)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) for creating new [**sound identifiers**](#gt_716a44b6-1255-4f18-be9d-f2f53dbceacc) for sounds in the **SoundCollectionContainer** record (section 2.4.16.1).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundIdSeed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SoundCollectionAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**soundIdSeed (4 bytes):** A signed integer that specifies the seed for creating a new sound identifier. It MUST be greater than 0x00000000 and greater than or equal to all sound identifiers specified by the [SoundIdAtom](#Section_00d3b37fe99a43e0b5e8578c0c9a9a94) records.

#### SoundContainer

*Referenced by:* [*AnimationInfoContainer*](#Section_a35de8fea76b43fc8e53ebcff8843705)*,* [*SoundCollectionContainer*](#Section_8b25294d1485419fa85f48580b8cfbef)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about an embedded sound.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundExtensionAtom (16 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundIdAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| builtinIdAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundDataBlob (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Sound](#Section_38fb1fa50a62477a8b14178df22de812). |

**soundNameAtom (variable):** A [SoundNameAtom](#Section_f593b2eb8e414e02aed5143e2f109497) record that specifies the name of the sound.

**soundExtensionAtom (16 bytes):** An optional [SoundExtensionAtom](#Section_9cd28f87c72244dcadc5ed72233e19cf) record that specifies the format of the audio data.

**soundIdAtom (variable):** A [SoundIdAtom](#Section_00d3b37fe99a43e0b5e8578c0c9a9a94) record that specifies the [**sound identifier**](#gt_716a44b6-1255-4f18-be9d-f2f53dbceacc) for the sound.

**builtinIdAtom (variable):** An optional [SoundBuiltinIdAtom](#Section_430f8098998a4b9a8e9ef93b5d2dce08) record that specifies an identifier that describes the sound.

**soundDataBlob (variable):** A [SoundDataBlob](#Section_e28036d86cea4142b823ed856b87eb52) record that specifies the audio data for the sound.

#### SoundNameAtom

*Referenced by:* [*SoundContainer*](#Section_8c5498fa18324659a02bd23e28ef21b3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of a sound.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**soundName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of a sound. The length, in bytes, of the field is specified by **rh.recLen**.

#### SoundExtensionAtom

*Referenced by:* [*SoundContainer*](#Section_8c5498fa18324659a02bd23e28ef21b3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the format of the audio data for a sound.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundExtension | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000008. |

**soundExtension (8 bytes):** A **UTF-16 Unicode** [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) **string** that specifies the format of the audio data for a sound. It SHOULD[<13>](#Appendix_A_13" \o "Product behavior note 13) be a value from the following table.

| Value (case-insensitive) | Meaning |
| --- | --- |
| .wav | The format is [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5). |
| wave | The format is WAV. |
| .aif | The format is [**Audio Interchange File Format (AIFF)**](#gt_bca83483-d1d0-4227-a1c3-e6e63d26257b). |
| aiff | The format is AIFF. |

#### SoundIdAtom

*Referenced by:* [*SoundContainer*](#Section_8c5498fa18324659a02bd23e28ef21b3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the [**sound identifier**](#gt_716a44b6-1255-4f18-be9d-f2f53dbceacc) for a sound.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundId (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**soundId (variable):** A UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string representation of the base-10 form of an integer value that specifies the sound identifier for a sound. The integer value MUST be greater than zero, less than or equal to the [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) specified by the [SoundCollectionAtom](#Section_e74f6ee22f184b8e8ba514594f5121ae) record and unique within the **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)). The length, in bytes, of the field is specified by **rh.recLen**.

#### SoundBuiltinIdAtom

*Referenced by:* [*SoundContainer*](#Section_8c5498fa18324659a02bd23e28ef21b3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a description of a sound.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundBuiltinId (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**soundBuiltinId (variable):** A UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) string representation of the base-10 form of an integer value that specifies a description of a sound. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 100 | Cash Register |
| 101 | Typewriter |
| 102 | Screeching Brakes |
| 103 | Whoosh |
| 104 | Laser |
| 105 | Camera |
| 106 | Chime |
| 107 | Clapping |
| 108 | Applause |
| 109 | Drive By |
| 110 | Drum Roll |
| 111 | Explosion |
| 112 | Breaking Glass |
| 113 | Gunshot |
| 114 | Slide Projector |
| 115 | Ricochet |
| 116 | Arrow |
| 117 | Bomb |
| 118 | Breeze |
| 119 | Click |
| 120 | Coin |
| 121 | Hammer |
| 122 | Push |
| 123 | Suction |
| 124 | Voltage |
| 125 | Wind |

The length, in bytes, of the field is specified by **rh.recLen**.

### Broadcast Types

#### BroadcastDocInfo9Container

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies settings for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560). It SHOULD[<14>](#Appendix_A_14" \o "Product behavior note 14) be ignored. Some settings refer to NetShow; see [[MSFT-UMWNSNS]](https://go.microsoft.com/fwlink/?LinkId=115448) for more information.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcTitleAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcDescrAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcSpeakerAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcContactAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcRexServerNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcEmailAddressAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcEmailNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcChatUrlAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcArchiveDirAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcNSFilesBaseDirAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcNSFilesDirAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcNSServerNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcPptFilesBaseDirAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcPptFilesDirAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcPptFilesBaseUrlAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcUserNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcBroadcastDateTimeAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcPresentationNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcAsdFileNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcEntryIdAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bcDocInfoAtom (42 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_BroadcastDocInfo9](#Section_38fb1fa50a62477a8b14178df22de812). |

**bcTitleAtom (variable):** An optional [BCTitleAtom](#Section_b23020bf56be4dcbac021f5c1810a9fe) record that specifies the title.

**bcDescrAtom (variable):** An optional [BCDescriptionAtom](#Section_ec0f01d0a3b3455eae9b2442a78c67f7) record that specifies the description.

**bcSpeakerAtom (variable):** An optional [BCSpeakerAtom](#Section_813f0adc905c479293646eb4084ee5f1) record that specifies the name of the speaker.

**bcContactAtom (variable):** An optional [BCContactAtom](#Section_2c5c4e52addc40249d72817236b04f86) record that specifies the name of the contact person.

**bcRexServerNameAtom (variable):** An optional [BCRexServerNameAtom](#Section_4a10f915e5434368811fd601ead00716) record that specifies the name of the remote computer to which a camera or microphone is connected to record the video or audio. It MUST exist if the **fCameraRemote** field of the [BroadcastDocInfoAtom](#Section_53cdb990207c44bfaa2bb9852c84c0a1) record is set to **TRUE**.

**bcEmailAddressAtom (variable):** An optional [BCEmailAddressAtom](#Section_d01fcb8e7c574d7aa8e3c906e8afcd6f) record that specifies the e-mail address for audience feedback.

**bcEmailNameAtom (variable):** An optional [BCEmailNameAtom](#Section_1305677b209947069db3eb4133841122) record that specifies the e-mail name for audience feedback. It MUST exist if **bcDocInfoAtom.fCanEmail** is **TRUE**.

**bcChatUrlAtom (variable):** An optional [BCChatUrlAtom](#Section_c8b8114bc07849078613e759997bb455) record that specifies the URL of a chat server**.**

**bcArchiveDirAtom (variable):** An optional [BCArchiveDirAtom](#Section_cfc1123f2cae404789d19f70b21c7d37) record that specifies the directory location to archive this presentation broadcast.

**bcNSFilesBaseDirAtom (variable):** An optional [BCNetShowFilesBaseDirAtom](#Section_6c370c4420db41d687ce9cd5cfdb03bb) record that specifies the UNC base directory to store presentation broadcast files for NetShow.

**bcNSFilesDirAtom (variable):** An optional [BCNetShowFilesDirAtom](#Section_3029ca8ef20642db97c961fa0b6a8673) record that specifies the UNC directory location to store presentation broadcast files for NetShow. It MUST exist if **bcDocInfoAtom.fUseNetShow** is **TRUE**.

**bcNSServerNameAtom (variable):** An optional [BCNetShowServerNameAtom](#Section_794f6bfb3a6242fe997c299758084615) record that specifies the name of the NetShow server. It MUST exist if **bcDocInfoAtom.fUseNetShow** is **TRUE**.

**bcPptFilesBaseDirAtom (variable):** A [BCPptFilesBaseDirAtom](#Section_3e60a89e381c41a581e6488d7a0fb58c) record that specifies the path to the UNC base directory to store presentation broadcast files.

**bcPptFilesDirAtom (variable):** A [BCPptFilesDirAtom](#Section_86cd0cd5cc864029ad7d6fd3b90ecf04) record that specifies the path to the UNC directory to store presentation broadcast files.

**bcPptFilesBaseUrlAtom (variable):** A [BCPptFilesBaseUrlAtom](#Section_b43dce86be6042cda1cec6d7bd9b9c06) record that specifies the UNC or HTTP location of the directory specified in **bcPptFilesDirAtom**.

**bcUserNameAtom (variable):** A [BCUserNameAtom](#Section_35dcadecfa5b43cbb611a77144bf576f) record that specifies the name of the user who scheduled the presentation broadcast.

**bcBroadcastDateTimeAtom (variable):** A [BCBroadcastDateTimeAtom](#Section_559aeb29dff8469780778f6a81f8e02b) record that specifies the directory name to create under the base directory specified in **bcPptFilesBaseDirAtom**.

**bcPresentationNameAtom (variable):** A [BCPresentationNameAtom](#Section_2e98de7a7bb14660aac57b7cc6b5fca0) record that specifies the name of the presentation.

**bcAsdFileNameAtom (variable):** A [BCAsdFileNameAtom](#Section_b7946e738685414aae7bb6aaa9011808) record that specifies the location of an ASD file. The ASD file is the description file for an Advanced Systems Format (ASF) file, described in [[ASF]](https://go.microsoft.com/fwlink/?LinkId=89814), used to stream audio and video content.

**bcEntryIdAtom (variable):** An optional [BCEntryIDAtom](#Section_87a49d205b7640cba4df1cbd507c42fe) record that specifies the identifier for a calendar item to associate with this presentation broadcast.

**bcDocInfoAtom (42 bytes):** A BroadcastDocInfoAtom record that specifies properties of a presentation broadcast.

#### BCTitleAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the title of a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCTitleAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| title (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**title (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the title of the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCDescriptionAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the description of a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCDescriptionAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| description (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 2040. |

**description (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the description of the correspondingpresentation broadcast. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCSpeakerAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the speaker for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCSpeakerAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| speaker (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**speaker (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of the speaker for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCContactAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the contact person for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCContactAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| contact (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x004. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**contact (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of the contact person for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCRexServerNameAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the remote computer to which a camera or microphone is connected to record the video or audio of a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCRexServerNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rexServerName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x005. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**rexServerName (variable):** A [MachineName](#Section_732274e8110340bfa451b1af4e703922) that specifies the name of the remote computer to which a camera or microphone is connected to record the video or audio of the correspondingpresentation broadcast. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCEmailAddressAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the e-mail address for audience feedback during a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCEmailAddressAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| emailAddress (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x006. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**emailAddress (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the e-mail address for audience feedback for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCEmailNameAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the email name for audience feedback for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCEmailNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| emailName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x007. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**emailName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the e-mail name for audience feedback for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCChatUrlAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the URL of a chat server for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCChatUrlAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| chatUrl (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x008. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 4166. |

**chatUrl (variable):** An [HttpUrl](#Section_5984700489424f88a929fcfd49289bd3) that specifies the URL of a chat server for the correspondingpresentation broadcast. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCArchiveDirAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the directory location for archival storage of the [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCArchiveDirAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| archiveDir (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x009. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 510. |

**archiveDir (variable):** A [UncOrLocalPath](#Section_dd863c41d58d487381f39a6cb84a718c) that specifies the UNC directory location for archival storage of the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCNetShowFilesBaseDirAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the UNC base directory to store [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560) files for NetShow. For more information about NetShow, see [[MSFT-UMWNSNS]](https://go.microsoft.com/fwlink/?LinkId=115448).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCNetShowFilesBaseDirAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| netShowFilesBaseDir (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x00A. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 510. |

**netShowFilesBaseDir (variable):** A [UncPath](#Section_c6b4538aca1544e18f013311f5d28071) that specifies the UNC base directory to store files for NetShow for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCNetShowFilesDirAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the UNC directory to store [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560) files for NetShow. For more information about NetShow, see [[MSFT-UMWNSNS]](https://go.microsoft.com/fwlink/?LinkId=115448).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCNetShowFilesDirAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| netShowFilesDir (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x00B. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 494. |

**netShowFilesDir (variable):** A [UncPath](#Section_c6b4538aca1544e18f013311f5d28071) that specifies the UNC directory to store files for NetShow for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCNetShowServerNameAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the NetShow server to use for the [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560). For more information about NetShow, see [[MSFT-UMWNSNS]](https://go.microsoft.com/fwlink/?LinkId=115448).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCNetShowServerNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| netShowServerName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x00C. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**netShowServerName (variable):** A [MachineName](#Section_732274e8110340bfa451b1af4e703922) that specifies the name of the NetShow server for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCPptFilesBaseDirAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the path to the UNC base directory to store [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560) files.

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCPptFilesBaseDirAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptFilesBaseDir (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x00D. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 510. |

**pptFilesBaseDir (variable):** A [UncPath](#Section_c6b4538aca1544e18f013311f5d28071) that specifies the path to the UNC base directory to store files for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCPptFilesDirAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the path to the UNC directory to store [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560) files.

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCPptFilesDirAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptFilesDir (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x00E. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 494. |

**pptFilesDir (variable):** A [UncPath](#Section_c6b4538aca1544e18f013311f5d28071) that specifies the path to the UNC directory to store files for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCPptFilesBaseUrlAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the location of the [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560) files.

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCPptFilesBaseUrlAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptFilesBaseUrl (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x00F. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 4118. |

**pptFilesBaseUrl (variable):** A [UncPathOrHttpUrl](#Section_f3d6c1dc5dec437898017ff13a00f248) that specifies the location of the files for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCUserNameAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the user who scheduled the [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCUserNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| userName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x010. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 510. |

**userName (variable):** A [FileOrDirNameFragment](#Section_8870f902a03744bebb4ca91dfb82f2e4) that specifies the name of the user who scheduled the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCBroadcastDateTimeAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the directory name to create under the base directory of a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCBroadcastDateTimeAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| broadcastDateTime (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x011. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 520. |

**broadcastDateTime (variable):** A [FileOrDirNameFragment](#Section_8870f902a03744bebb4ca91dfb82f2e4) that specifies the directory name to create under the base directory specified in the **bcPptFilesBaseDirAtom** field of the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCPresentationNameAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the presentation in a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCPresentationNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| presentationName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x012. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 510. |

**presentationName (variable):** A [FileOrDirNameFragment](#Section_8870f902a03744bebb4ca91dfb82f2e4) that specifies the name of the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCAsdFileNameAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the location of an ASD file for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560). The ASD file is the description file for an Advanced Systems Format (ASF) file, described in [[ASF]](https://go.microsoft.com/fwlink/?LinkId=89814), used to stream audio and video content.

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCAsdFileNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| asdFileName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x013. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than 520. |

**asdFileName (variable):** A [UncPath](#Section_c6b4538aca1544e18f013311f5d28071) that specifies the location of an ASD file for the correspondingpresentation broadcast. The length, in bytes, of the field is specified by **rh.recLen**.

#### BCEntryIDAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the identifier for a calendar item to associate with this [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BCEntryIDAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| entryId (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x014. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**entryId (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the calendar item identifier for the *corresponding presentation broadcast*. The length, in bytes, of the field is specified by **rh.recLen**.

#### BroadcastDocInfoAtom

*Referenced by:* [*BroadcastDocInfo9Container*](#Section_e48938ffa37e4054ad394315cabbbfe0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies properties of a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560).

Let the *corresponding presentation broadcast* be specified by the BroadcastDocInfo9Container record that contains this **BroadcastDocInfoAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | K | L | M | | | | startTime (16 bytes) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | endTime (16 bytes) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_BroadcastDocInfo9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000022. |

**A - fSendAudio (1 bit):** A bit that specifies whether to include an audio stream.

**B - fSendVideo (1 bit):** A bit that specifies whether to include a video stream.

**C - fCameraRemote (1 bit):** A bit that specifies whether the camera is located on a computer other than the computer giving the *corresponding presentation broadcast*.

**D - fUseNetShow (1 bit):** A bit that specifies whether to use NetShow server technology described in [[MSFT-UMWNSNS]](https://go.microsoft.com/fwlink/?LinkId=115448).

**E - fUseOtherServer (1 bit):** A bit that specifies whether to use a third-party server for the *corresponding presentation broadcast*.

**F - fCanEmail (1 bit):** A bit that specifies whether an e-mail address is provided to the audience.

**G - fCanChat (1 bit):** A bit that specifies whether a chat URL is provided to the audience.

**H - fDoArchive (1 bit):** A bit that specifies whether the *corresponding presentation broadcast* is archived.

**I - fSpeakerNotes (1 bit):** A bit that specifies whether the audience can see the speaker notes.

**J - fQuarterScreen (1 bit):** A bit that specifies whether the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) is displayed to the presenter in a resizable window.

**K - fShowTools (1 bit):** A **bit** that specifies whether to show speaker notes to the presenter.

**L - fRecordOnly (1 bit):** A bit that specifies whether the *corresponding presentation broadcast* is for recording only.

**M - reserved (4 bits):** MUST be zero and MUST be ignored.

**startTime (16 bytes):** A [DateTimeStruct](#Section_2da0b9bf164f403dbf1bf8b83b2af166) structure that specifies the time the correspondingpresentation broadcast is scheduled to begin.

**endTime (16 bytes):** A DateTimeStruct structure that specifies the time the correspondingpresentation broadcast is scheduled to end.

### HTML Publish Types

#### HTMLDocInfo9Atom

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies settings for how to publish a document as a Web page.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| encoding | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| frameColorType | | | | | | | | | | | | | | | | screenSize | | | | | | | | unused2 | | | | | | | |
| outputType | | | | | | | | A | B | C | D | E | F | G | H | unused3 | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_HTMLDocInfo9Atom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**unused1 (4 bytes):** Undefined and MUST be ignored.

**encoding (4 bytes):** An unsigned integer that specifies the [**code page**](#gt_210637d9-9634-4652-a935-ded3cd434f38) for character encoding used by the Web page. See [[MSDN-CP]](https://go.microsoft.com/fwlink/?LinkId=89981) for a list of possible code pages.

**frameColorType (2 bytes):** A [**WebFrameColorsEnum**](#Section_33f64cba48d14482a9fede9f32d0b8d6) enumeration that specifies color options for displaying the text and background for the Web page notes pane and outline pane.

**screenSize (1 byte):** A **WebScreenSizeEnum** as specified in [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.2.1.4 that specifies the document window size for the monitor on which the Web page is displayed.

**unused2 (1 byte):** Undefined and MUST be ignored.

**outputType (1 byte):** A [**WebOutputEnum**](#Section_3b7b79c44daf45549c6fd1fdaf72c323) enumeration that specifies the Web browser support that this publication ought to be optimized for.

**A - fShowFrame (1 bit):** A bit that specifies whether to include the notes pane and outline pane representation in the Web page.

**B - fResizeGraphics (1 bit):** A bit that specifies whether the graphics in the Web page are resizable.

**C - fOrganizeInFolder (1 bit):** A bit that specifies whether any additional files created to represent Web page content in a Web browser are stored in a separate folder.

**D - fUseLongFileNames (1 bit):** A bit that specifies whether a file name longer than eight characters is valid.

**E - fRelyOnVML (1 bit):** A bit that specifies whether the Web page requires [**Vector Markup Language (VML)**](#gt_eb6b7893-b656-4b91-8fab-51fd1cf28a38) to display in a Web browser.

**F - fAllowPNG (1 bit):** A bit that specifies whether to save pictures supporting the Web page using [**Portable Network Graphics (PNG)**](#gt_212c87ce-40ba-4311-be2a-494f1a116604) format.

**G - fShowSlideAnimation (1 bit):** A bit that specifies whether the Web page contains object animation and slide transition effect information.

**H - reserved (1 bit):** MUST be zero and MUST be ignored.

**unused3 (2 bytes):** Undefined and MUST be ignored.

#### HTMLPublishInfo9Container

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies additional information for how to publish a document as a Web page.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fileNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShowAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| htmlPublishInfoAtom (20 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_HTMLPublishInfo9** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**fileNameAtom (variable):** A [FileNameAtom](#Section_2b13333268de4f7ab42d96bc0f130818) record that specifies the file name.

**namedShowAtom (variable):** An optional [NamedShowAtom](#Section_5962eaa99cc04996b9020b4477790727) record that specifies the [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510) being published. It MUST exist if the **htmlPublishInfoAtom.fUseNamedShowX** field is set to **TRUE**.

**htmlPublishInfoAtom (20 bytes):** A [HTMLPublishInfoAtom](#Section_4296eeb2c07643a29a23bf645a2054c6) record that specifies the settings for publishing the document.

#### FileNameAtom

*Referenced by:* [*HTMLPublishInfo9Container*](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the file name of the Web page being published.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fileName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**fileName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies a local path, a [**UNC**](#gt_c9507dca-291d-4fd6-9cba-a9ee7da8c908) path, or a URI (specified in [[RFC3986]](https://go.microsoft.com/fwlink/?LinkId=90453)) with the HTTP or FTP scheme. The length, in bytes, of the field is specified by **rh.recLen**. See [[MSDN-FILE]](https://go.microsoft.com/fwlink/?LinkId=90004) for more information about file naming.

#### NamedShowAtom

*Referenced by:* [*HTMLPublishInfo9Container*](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510) that is published to a Web page.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShow (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 62. |

**namedShow (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the named show to publish. It MUST be the same as the value of the **namedShowName** field of a [NamedShowNameAtom](#Section_41443c4148f440d58ec7e9306d25545c) record. The length, in bytes, of the field is specified by **rh.recLen**.

#### HTMLPublishInfoAtom

*Referenced by:* [*HTMLPublishInfo9Container*](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the settings to publish the document to a Web page.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| startSlide | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| endSlide | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| outputType | | | | | | | | A | B | C | D | E | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_HTMLPublishInfoAtom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x0000000C. |

**startSlide (4 bytes):** A signed integer that specifies the first slide in the range of slides to publish. It MUST be greater than or equal to zero.

**endSlide (4 bytes):** A signed integer that specifies the last slide in the range of slides to publish. It MUST be greater than or equal to zero.

**outputType (1 byte):** A [**WebOutputEnum**](#Section_3b7b79c44daf45549c6fd1fdaf72c323) enumeration that specifies the Web browser support that this publication ought to be optimized for.

**A - fUseSlideRangeX (1 bit):** A bit that specifies whether to publish the range of slides defined by **startSlide** and **endSlide**.

**B - fUseNamedShowX (1 bit):** A bit that specifies whether to publish the slides defined by the **namedShowAtom** field of the HTMLPublishInfo9Container record that contains this **HTMLPublishInfoAtom** record.

**C - fLoadInBrowserX (1 bit):** A bit that specifies whether to automatically display the Web page in the Web browser.

**D - fShowSpeakerNote (1 bit):** A bit that specifies whether to display the notes pane when viewing the Web page in a Web browser.

**E - reserved (4 bits):** MUST be zero and MUST be ignored.

**unused (2 bytes):** Undefined and MUST be ignored.

### Comment Author Types

#### CommentIndex10Container

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information for an author who creates a [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| authorNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| authorIndexAtom (16 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| rh.recVer | MUST be 0xF. |
| rh.recInstance | MUST be 0x000. |
| rh.recType | MUST be [RT\_CommentIndex10](#Section_38fb1fa50a62477a8b14178df22de812). |

**authorNameAtom (variable):** An optional [AuthorNameAtom](#Section_7b27b62888e14066b7778b6fe9f43ae1) record that specifies the name of the author.

**authorIndexAtom (16 bytes):** An optional [CommentIndex10Atom](#Section_d86171f5075d481c9593151aee6465ff) record that specifies an index for deriving a color for the author’s presentation comments and an index for the last presentation comment created by the author.

#### AuthorNameAtom

*Referenced by:* [*CommentIndex10Container*](#Section_0655d45268fc400fbb377a9157f09126)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the author who created a [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| authorName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString**. |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 104. |

**authorName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of the author. The length, in bytes, of the field is specified by **rh.recLen**.

#### CommentIndex10Atom

*Referenced by:* [*CommentIndex10Container*](#Section_0655d45268fc400fbb377a9157f09126)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies an index for deriving a color used to display the author’s [**presentation comments**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9) and an index for the last presentation comment created by the author.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colorIndex | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentIndexSeed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| rh.recVer | MUST be 0x0. |
| rh.recInstance | MUST be 0x000. |
| rh.recType | MUST be [RT\_CommentIndex10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| rh.recLen | MUST be 0x00000008. |

**colorIndex (4 bytes):** A signed integer that specifies a zero-based index into the list of colors defined by the rendering application used for displaying the presentation comments created by the author. It MUST be greater than or equal to 0x00000000.

**commentIndexSeed (4 bytes):** A signed integer that specifies a [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) for creating a new index for a presentation comment created by the author. It MUST be greater than or equal to 0x00000000 and MUST be greater than or equal to the value of the **commentAtom.index** field of all [Comment10Container](#Section_1a15453d859f48ee8dcd4d51ab9227f8) records, where the author name specified by the **commentAuthorAtom** field of the Comment10Container record matches the author name specified by the **authorNameAtom** field of the CommentIndex10Container record that contains this **CommentIndex10Atom** record.

### Document Comparison Types

#### DocToolbarStates10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the display options for a reviewing toolbar that has controls that manage [**presentation comments**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9) and the information contained by the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) records and a reviewing gallery that displays the information contained by the DiffTree10Container records.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | reserved | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_DocToolbarStates10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**A - fShowReviewingToolbar (1 bit):** A bit that specifies whether to display the reviewing toolbar.

**B - fShowReviewingGallery (1 bit):** A bit that specifies whether to display the reviewing gallery.

**reserved (6 bits):** MUST be zero and MUST be ignored.

#### SlideListTable10Container

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) contained in the document that also contains this **SlideListTable10Container** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideListTableSizeAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSlideListEntryAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| rh.recVer | MUST be 0xF. |
| rh.recInstance | MUST be 0x000. |
| rh.recType | MUST be [RT\_SlideListTable10](#Section_38fb1fa50a62477a8b14178df22de812). |

**slideListTableSizeAtom (12 bytes):** A [SlideListTableSize10Atom](#Section_e0b1efea693c480fa45b857c54124a2a) record that specifies the number of [SlideListEntry10Atom](#Section_29e7a9d4974845d6abaa921772ca43a3) records in the **rgSlideListEntryAtom** field.

**rgSlideListEntryAtom (variable):** An array of SlideListEntry10Atom records that specifies the creation time of the presentation slides in the document. The count of items in the array is specified by the **slideListTableSizeAtom.count** field.

#### SlideListTableSize10Atom

*Referenced by:* [*SlideListTable10Container*](#Section_42463f5b55c7457598467f4b412228aa)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the count of the [SlideListEntry10Atom](#Section_29e7a9d4974845d6abaa921772ca43a3) records that are contained within the SlideListTable10Container record that contains this **SlideListTableSize10Atom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideListTableSize10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**count (4 bytes):** A signed integer that specifies the count of the **rgSlideListEntryAtom** field of the SlideListTable10Container record that contains this **SlideListTableSize10Atom** record. It MUST be greater than or equal to 0x00000000 and MUST be less than or equal to 0x000F4240.

#### SlideListEntry10Atom

*Referenced by:* [*SlideListTable10Container*](#Section_42463f5b55c7457598467f4b412228aa)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the creation time of a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) in the document that contains this **SlideListEntry10Atom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dwHighDateTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dwLowDateTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| rh.recVer | MUST be 0x0. |
| rh.recInstance | MUST be 0x000. |
| rh.recType | MUST be [RT\_SlideListEntry10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| rh.recLen | MUST be 0x0000000C. |

**slideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies the presentation slide. Its creation time is specified by the **dwHighDateTime** and **dwLowDateTime** fields of this SlideListEntry10Atom record.

**dwHighDateTime (4 bytes):** An unsigned integer that specifies the high-order part of the file time, as specified in [[MS-DTYP]](%5bMS-DTYP%5d.pdf#Section_cca2742956894a16b2b49325d93e4ba2) section [2.3.3](http://msdn.microsoft.com/en-us/library/2c57429b-fdd4-488f-b5fc-9e4cf020fcdf/).

**dwLowDateTime (4 bytes):** An unsigned integer that specifies the low-order part of the file time, as specified in [MS-DTYP] section 2.3.3.

#### DiffTree10Container

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the name of a reviewer and how to display the changes to the document made by that reviewer.

Let the *corresponding main master slide* be specified by the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) that is specified by the first **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) in the **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)).

Let the *corresponding shape* be specified by the **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14)such thatthe **wzName\_complex** property ([MS-ODRAW] section 2.3.4.2) matches the string "Reviewer". The *corresponding shape* is contained by the **drawing** field of the *corresponding main master slide*.

Let the *corresponding OLE object* be specified by the **ExOleEmbedContainer** record (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229) ) whose **exOleObjAtom.exObjId** field matches the **exObjIdRef** field of the [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f)record that is contained by the *corresponding shape*.

Let the *corresponding reviewer document* be specified by the *corresponding OLE object*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reviewerNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| docDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_DiffTree10](#Section_38fb1fa50a62477a8b14178df22de812). |

**reviewerNameAtom (variable):** A [ReviewerNameAtom](#Section_5aa53fdfa0794ce2a27fa1af7106a427) record that specifies the name of the reviewer who made the changes tothe *corresponding reviewer document*.

**docDiff (variable):** A [DocDiff10Container](#Section_3c109426135949a0a42d2a79bf6f0d90) record that specifies how to display the changes made by the reviewer to the *corresponding reviewer document*.

#### ReviewerNameAtom

*Referenced by:* [*DiffTree10Container*](#Section_ea695ebc48d847e7a77e747ecd4e8d75)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the reviewer who made changes to a copy of the document that was later merged into this document.

The name of the reviewer MUST be the value of the **GKPIDSI\_AUTHOR** property ([[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.3.3.2.1.1) of the **Summary Info Stream** (section [2.1.4](#Section_dfea964e936f42bb838c3fc19909cc32)) specified in the *corresponding reviewer document*.

Let the *corresponding reviewer document* be as specified in the DiffTree10Container record that contains this **ReviewerNameAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reviewerName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 104. |

**reviewerName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of the reviewer. The length, in bytes, of the field is specified by **rh.recLen**.

#### DiffRecordHeaders

*Referenced by:* [*DocDiff10Container*](#Section_3c109426135949a0a42d2a79bf6f0d90)*,* [*ExternalObjectDiffContainer*](#Section_abb251c1a17a419a8519e799dc1e4721)*,* [*HeaderFooterDiffContainer*](#Section_dc773f9fdf844d419f50b206d6662d50)*,* [*InteractiveInfoDiffContainer*](#Section_b3fac6098b6e4b67b7a200a41f8765d6)*,* [*MainMasterDiffContainer*](#Section_d9a1101e91ae43d7a5f9627c3e05f91a)*,* [*MasterListDiffContainer*](#Section_e4bc97ae22de423f8e2f333018ed65c0)*,* [*NamedShowDiffContainer*](#Section_51d270c9772b4d1d865e585cd0b5d86c)*,* [*NamedShowListDiffContainer*](#Section_fff0a29d98ff478cb460e2fbe000ab7e)*,* [*NotesDiffContainer*](#Section_2414449c9ca34ad29aabe195e96ce4df)*,* [*RecolorInfoDiffContainer*](#Section_f3301c55be65413c824042f97e72ae65)*,* [*ShapeDiffContainer*](#Section_c1ec712373fc4f01a3085935234abe33)*,* [*ShapeListDiffContainer*](#Section_21ff0b659bae474294bf5e4af99a6b1b)*,* [*SlideDiffContainer*](#Section_899d425cba9b4a3eb5ab64f65b2897f3)*,* [*SlideListDiffContainer*](#Section_1d3c490c38884f5d91e4cc059baf4a65)*,* [*SlideShowDiffContainer*](#Section_68fde33d71a0419380509f0dbd2301de)*,* [*TableDiffContainer*](#Section_a3e432fbcc1547eebb2fc7f5838118e9)*,* [*TableListDiffContainer*](#Section_ca72b575025f4d6da4b6bcb00527b746)*,* [*TextDiffContainer*](#Section_51f0806e0d314075b25784d19dbe6ca5)

A structure at the beginning of each [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d), when that container record is used to specify how to display the changes to a document made by a reviewer.

Let the *corresponding reviewer document* be as specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **DiffRecordHeaders** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fIndex | | | | | | | | unused1 | | | | | | | | unused2 | | | | | | | | unused3 | | | | | | | |
| gmiTag | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused4 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Diff10](#Section_38fb1fa50a62477a8b14178df22de812). |

**rhAtom (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies a header for the [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies how the changes made by the reviewer are displayed. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhAtom.recVer** | MUST be 0x0. |
| **rhAtom.recInstance** | MUST be 0x000. |
| **rhAtom.recType** | MUST be RT\_Diff10Atom. |
| **rhAtom.recLen** | MUST be 0x0000000C. |

**fIndex (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies instance data. Interpretation of the value is dependent on **gmiTag**.

**unused1 (1 byte):** Undefined and MUST be ignored.

**unused2 (1 byte):** Undefined and MUST be ignored.

**unused3 (1 byte):** Undefined and MUST be ignored.

**gmiTag (4 bytes):** A [**DiffTypeEnum**](#Section_ef8a54b2da854dbab9a60131d8f579c7) enumeration that identifies the type of changes made by the reviewer.

**unused4 (4 bytes):** Undefined and MUST be ignored.

#### DocDiff10Container

*Referenced by:* [*DiffTree10Container*](#Section_ea695ebc48d847e7a77e747ecd4e8d75)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display document-level changes made by the reviewer.

Let the *corresponding reviewer document* be as specified in the DiffTree10Container record that contains this **DocDiff10Container** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | C | D | E | F | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | |
| slideHFDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesHFDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShowListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| masterListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_DocDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**B - slideSize (1 bit):** A bit that specifies whether the change made by the reviewer in the *corresponding reviewer document* to the **slideSize** field of the **DocumentAtom** record (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)) is not displayed.

**C - omitTitlePlace (1 bit):** A bit that specifies whether the change made by the reviewer in the *corresponding reviewer document* to the **fOmitTitlePlace** field of the **DocumentAtom** record is not displayed.

**D - namedShowList (1 bit):** A bit that specifies whether the changes made by the reviewer in the *corresponding reviewer document* to any [NamedShowContainer](#Section_a397a8a306f54fe780ea10ead0e1aeb0) record in the **NamedShowsContainer** record (section [2.6.2](#Section_a3d04187565b423f90c637d219781b0c)) are not displayed.

**E - slideHeaderFooter (1 bit):** A bit that specifies whether the changes made by the reviewer in the *corresponding reviewer document* to the **SlideHeadersFootersContainer** record (section [2.4.15.1](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)) are not displayed.

**F - notesHeaderFooter (1 bit):** A bit that specifies whether the changes made by the reviewer in the *corresponding reviewer document* to the **NotesHeadersFootersContainer** record (section [2.4.15.6](#Section_58fe42d1259e4f809a342567c565125e)) are not displayed.

**reserved2 (25 bits):** MUST be zero and MUST be ignored.

**slideHFDiff (32 bytes):** An optional [HeaderFooterDiffContainer](#Section_dc773f9fdf844d419f50b206d6662d50) record that specifies how to display the changes made by the reviewer in the *corresponding reviewer document* to the **SlideHeadersFootersContainer** record.

**notesHFDiff (32 bytes):** An optional HeaderFooterDiffContainer record that specifies how to display the changes made by the reviewer in the *corresponding reviewer document* to the **NotesHeadersFootersContainer** record.

**namedShowListDiff (variable):** An optional [NamedShowListDiffContainer](#Section_fff0a29d98ff478cb460e2fbe000ab7e) record that specifies how to display the changes made by the reviewer in the *corresponding reviewer document* to each NamedShowContainer record in the **NamedShowsContainer** record.

**masterListDiff (variable):** An optional [MasterListDiffContainer](#Section_e4bc97ae22de423f8e2f333018ed65c0) record that specifies how to display the changes made by the reviewer in the *corresponding reviewer document* to each **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) in the **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)).

**slideListDiff (variable):** An optional [SlideListDiffContainer](#Section_1d3c490c38884f5d91e4cc059baf4a65) record that contains records that specify how to display the changes made by the reviewer in the *corresponding reviewer document* to each **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) in the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)).

#### HeaderFooterDiffContainer

*Referenced by:* [*DocDiff10Container*](#Section_3c109426135949a0a42d2a79bf6f0d90)*,* [*SlideDiffContainer*](#Section_899d425cba9b4a3eb5ab64f65b2897f3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the **SlideHeadersFootersContainer** (section [2.4.15.1](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)), **NotesHeadersFootersContainer** (section [2.4.15.6](#Section_58fe42d1259e4f809a342567c565125e)), or [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) record.

Let the *corresponding reviewer document* be as specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **HeaderFooterDiffContainer** record.

Let the *corresponding slide* be as specified in the SlideDiffContainer record that contains this **HeaderFooterDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | The value 0x00 specifies display information for the changes made in the *corresponding reviewer document* to the **NotesHeadersFootersContainer** record (section 2.4.15.6).  The value 0x01 specifies display information for the changes made in the *corresponding reviewer document* to the **SlideHeadersFootersContainer** record or to the PerSlideHeadersFootersContainer record in the *corresponding slide*. |
| **rhs.gmiTag** | MUST be [Diff\_HeaderFooterDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

#### NamedShowListDiffContainer

*Referenced by:* [*DocDiff10Container*](#Section_3c109426135949a0a42d2a79bf6f0d90)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the **NamedShowsContainer** record (section [2.6.2](#Section_a3d04187565b423f90c637d219781b0c)).

Let the *corresponding reviewer document* beas specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **NamedShowListDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgNamedShowDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_NamedShowListDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

**rgNamedShowDiff (variable):** An array of [NamedShowDiffContainer](#Section_51d270c9772b4d1d865e585cd0b5d86c) records that specifies how to display changes made by the reviewer in the *corresponding reviewer document* to the [**named shows**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510). The size, in bytes, of the array is specified by the following formula:

1. rhs.rh.recLen - rhs.rhAtom.recLen - 8

#### NamedShowDiffContainer

*Referenced by:* [*NamedShowListDiffContainer*](#Section_fff0a29d98ff478cb460e2fbe000ab7e)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to a [NamedShowContainer](#Section_a397a8a306f54fe780ea10ead0e1aeb0) record.

Let the *corresponding reviewer document* beas specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **NamedShowDiffContainer** record.

The ith**NamedShowDiffContainer** record in its parent NamedShowListDiffContainer record specifies how to display changes made to the ith NamedShowContainer record in its parent **NamedShowsContainer** record (section [2.6.2](#Section_a3d04187565b423f90c637d219781b0c)) in the *corresponding reviewer document*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_NamedShowDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

#### SlideListDiffContainer

*Referenced by:* [*DocDiff10Container*](#Section_3c109426135949a0a42d2a79bf6f0d90)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)).

Let the *corresponding reviewer document* be as specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **SlideListDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSlideDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_SlideListDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

**rgSlideDiff (variable):** An array of [SlideDiffContainer](#Section_899d425cba9b4a3eb5ab64f65b2897f3) records that specifies how to display changes made by the reviewer in the *corresponding reviewer document* to the **SlideListWithTextContainer** record (section 2.4.14.3). The size, in bytes, of the array is specified by the following formula:

1. rhs.rh.recLen - rhs.rhAtom.recLen - 8

#### MasterListDiffContainer

*Referenced by:* [*DocDiff10Container*](#Section_3c109426135949a0a42d2a79bf6f0d90)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)).

Let the *corresponding reviewer document* beas specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **MasterListDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_MasterListDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

**rgChildRec (variable):** An array of [MasterListDiff10ChildContainer](#Section_b239ca536d684666a39450132c45aa7f) records that specifies how to display changes made by the reviewer in the *corresponding reviewer document* to the **MasterListWithTextContainer** record (section 2.4.14.1). The size, in bytes, of the array is specified by the following formula:

1. rhs.rh.recLen - rhs.rhAtom.recLen - 8

#### MasterListDiff10ChildContainer

*Referenced by:* [*MasterListDiffContainer*](#Section_e4bc97ae22de423f8e2f333018ed65c0)

A variable type record whose type and meaning are dictated by the value of **rhs.gmiTag** as specified in the following table.

| Value | Meaning |
| --- | --- |
| [Diff\_SlideDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7) | A [SlideDiffContainer](#Section_899d425cba9b4a3eb5ab64f65b2897f3) record that specifies how to display the changes to a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). |
| Diff\_MainMasterDiff | A [MainMasterDiffContainer](#Section_d9a1101e91ae43d7a5f9627c3e05f91a) record that specifies how to display the changes to a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). |

#### MainMasterDiffContainer

*Referenced by:* [*MasterListDiff10ChildContainer*](#Section_b239ca536d684666a39450132c45aa7f)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

Let the *corresponding reviewer document* be as specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **MainMasterDiffContainer** record.

The ith**MainMasterDiffContainer** record in its parent [MasterListDiffContainer](#Section_e4bc97ae22de423f8e2f333018ed65c0) record specifies how to display changes made to the **MainMasterContainer** record in the *corresponding reviewer document* that is referenced by the ith **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) in its parent **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)) in the *corresponding reviewer document*. Let the *corresponding main master slide* be the **MainMasterContainer** record so specified.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | reserved1 | | | | | | | | | | C | D | E | F | reserved2 | | | | | | | | | | | | | | | |
| shapeListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tableListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_MainMasterDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - scheme (1 bit):** A **bit** that specifies whether the change made by the reviewer to the **slideFlags.fMasterScheme** field of the [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) record contained within the correspondingmain master slide is not displayed.

**B - background (1 bit):** A **bit** that specifies whether the change made by the reviewer to the **slideFlags.fMasterBackground** fieldof the SlideAtom record contained within the correspondingmain master slide is not displayed.

**reserved1 (10 bits):** MUST be zero and MUST be ignored.

**C - timeNode (1 bit):** A **bit** that specifies whether the change made by the reviewer to the **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) contained within the *corresponding main master slide* is not displayed.

**D - addMainMaster (1 bit):** A **bit** that specifies whether the addition of the *corresponding main master slide* made by the reviewer in the *corresponding reviewer document* is not displayed.

**E - deleteMainMaster (1 bit):** A **bit** that specifies whether the deletion of the *corresponding main master slide* made by the reviewer in the *corresponding reviewer document* is not displayed.

**F - locked (1 bit):** A **bit** that specifies whether the change made by the reviewer to the **slideFlagsAtom.fPreserveMaster** fieldof the [PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17) record contained within the *corresponding main master slide* is not displayed.

**reserved2 (16 bits):** MUST be zero and MUST be ignored.

**shapeListDiff (variable):** An optional [ShapeListDiffContainer](#Section_21ff0b659bae474294bf5e4af99a6b1b) record that specifies how to display the changes made by the reviewer to the [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) contained within the *corresponding main master* slide.

**tableListDiff (variable):** An optional [TableListDiffContainer](#Section_ca72b575025f4d6da4b6bcb00527b746) record that specifies how to display the changes made by the reviewer to the [**table objects**](#gt_06346f29-9db8-4503-b9d4-a4b4480fdc63) contained within the *corresponding main master slide*.

**notesDiff (32 bytes):** An optional [NotesDiffContainer](#Section_2414449c9ca34ad29aabe195e96ce4df) record that specifies how to display the changes made by the reviewer in the *corresponding reviewer document* to the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

#### SlideDiffContainer

*Referenced by:* [*MasterListDiff10ChildContainer*](#Section_b239ca536d684666a39450132c45aa7f)*,* [*SlideListDiffContainer*](#Section_1d3c490c38884f5d91e4cc059baf4a65)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e) or to a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

Let the *corresponding reviewer document* be as specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **SlideDiffContainer** record.

When this **SlideDiffContainer** record is contained within a [MasterListDiffContainer](#Section_e4bc97ae22de423f8e2f333018ed65c0) record, the ith**SlideDiffContainer** record in its parent MasterListDiffContainer record specifies how to display changes made to the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) in the *corresponding reviewer document* that is referenced by the ith **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) in its parent **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)) in the *corresponding reviewer document*. Let the *corresponding slide* be the **SlideContainer** record (section 2.5.1) so specified.

When this **SlideDiffContainer** record is contained within a SlideListDiffContainer, the ith**SlideDiffContainer** record in its parent SlideListDiffContainer record specifies how to display changes made to the **SlideContainer** record in the *corresponding reviewer document* that is specified by the ith **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) in its parent **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)) in the *corresponding reviewer document*. Let the *corresponding slide* be the **SlideContainer** record so specified.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | | D | E | F | G | H | I | J | K | L | reserved3 | | | | | | | | | | | | | | | | | | |
| shapeListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tableListDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideShowDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hfDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_SlideDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - scheme (1 bit):** A bit that specifies whether the change made by the reviewer to the **slideFlags.fMasterScheme** field of the [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) record contained within the *corresponding slide* is not displayed.

**B - background (1 bit):** A bit that specifies whether the change made by the reviewer to the **slideFlags.fMasterBackground** field of the SlideAtom record contained within the *corresponding slide* is not displayed.

**C - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**D - addSlide (1 bit):** A bit that specifies whether the addition of the *corresponding slide* made by the reviewer in the *corresponding reviewer document* is not displayed.

**E - deleteSlide (1 bit):** A bit that specifies whether the deletion of the *corresponding slide* made by the reviewer in the *corresponding reviewer document* is not displayed.

**F - layout (1 bit):** A bit that specifies whether the change made by the reviewer to the **geom** fieldof the SlideAtom record contained within the *corresponding slide* is not displayed.

**G - slideShow (1 bit):** A bit that specifies whether the changes made by the reviewer to the [SlideShowSlideInfoAtom](#Section_10dc4455c5d8472086468cde8644a040) record contained within the *corresponding slide* are not displayed.

**H - headerFooter (1 bit):** A bit that specifies whether the changes made by the reviewer in the *corresponding reviewer document* to the [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) record in the *corresponding slide* are not displayed.

**I - reserved2 (1 bit):** MUST be zero and MUST be ignored.

**J - master (1 bit):** A bit that specifies whether the change made by the reviewer to the **masterIdRef** field of the SlideAtom record contained within the *corresponding slide* is not displayed.

**K - position (1 bit):** A bit that specifies whether the change made by the reviewer to the position of the *corresponding slide* in the **SlideListWithTextContainer** record (section 2.4.14.3) in the *corresponding reviewer document* is not displayed.

**L - timeNode (1 bit):** A bit that specifies whether the change made by the reviewer to the **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) contained within the *corresponding slide* is not displayed.

**reserved3 (19 bits):** MUST be zero and MUST be ignored.

**shapeListDiff (variable):** An optional [ShapeListDiffContainer](#Section_21ff0b659bae474294bf5e4af99a6b1b) record that specifies how to display the changes made by the reviewer to the [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) contained within the *corresponding slide*.

**tableListDiff (variable):** An optional [TableListDiffContainer](#Section_ca72b575025f4d6da4b6bcb00527b746) record that specifies how to display the changes made by the reviewer to the [**table objects**](#gt_06346f29-9db8-4503-b9d4-a4b4480fdc63) contained within the *corresponding slide*.

**slideShowDiff (32 bytes):** An optional [SlideShowDiffContainer](#Section_68fde33d71a0419380509f0dbd2301de) record that specifies how to display the changes made by the reviewer to the SlideShowSlideInfoAtom record contained within the *corresponding slide*.

**hfDiff (32 bytes):** An optional [HeaderFooterDiffContainer](#Section_dc773f9fdf844d419f50b206d6662d50) record that specifies how to display the changes made by the reviewer to the PerSlideHeadersFootersContainer record contained within the *corresponding slide*.

**notesDiff (32 bytes):** An optional [NotesDiffContainer](#Section_2414449c9ca34ad29aabe195e96ce4df) record that specifies how to display the changes made by the reviewer to the [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) for the *corresponding slide*.

#### ShapeListDiffContainer

*Referenced by:* [*MainMasterDiffContainer*](#Section_d9a1101e91ae43d7a5f9627c3e05f91a)*,* [*SlideDiffContainer*](#Section_899d425cba9b4a3eb5ab64f65b2897f3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

Let the *corresponding slide* or *corresponding main master slide* be as specified in the SlideDiffContainer or MainMasterDiffContainer record that contains this **ShapeListDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgShapeDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_ShapeListDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

**rgShapeDiff (variable):** An array of [ShapeDiffContainer](#Section_c1ec712373fc4f01a3085935234abe33) records that specifies how to display changes made by the reviewer to the shapes contained within the *corresponding slide* or *corresponding main master slide*. The size, in bytes, of the array is specified by the following formula:

1. rhs.rh.recLen - rhs.rhAtom.recLen - 8

#### ShapeDiffContainer

*Referenced by:* [*ShapeListDiffContainer*](#Section_21ff0b659bae474294bf5e4af99a6b1b)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

Let the *corresponding slide* or *corresponding main master slide* be as specified in the ShapeListDiffContainer record that contains this **ShapeDiffContainer** record.

The ith **ShapeDiffContainer** record in its parent ShapeListDiffContainer specifies how to display changes made to the ith **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) contained within the *corresponding slide* or *corresponding main master slide*. Let the **OfficeArtSpContainer** record so specified be the *corresponding shape*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | reserved4 | | | | | | | | |
| textDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| recolorInfoDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| externalObjDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clickInteractiveInfoDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| overInteractiveInfoDiff (32 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_ShapeDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - addShape (1 bit):** A **bit** that specifies whether the addition of the *corresponding shape* made by the reviewer in the *corresponding slide* or *corresponding main master slide* is not displayed.

**B - deleteShape (1 bit):** A **bit** that specifies whether the deletion of the *corresponding shape* made by the reviewer in the *corresponding slide* or *corresponding main master slide* is not displayed.

**C - child (1 bit):** A **bit** that specifies whether the change made by the reviewer to the set of child shapes of the *corresponding shape* is not displayed.

MUST be ignored if the **shapeProp.fGroup** field of the **OfficeArtSpContainer** record ([MS-ODRAW] section 2.2.14) is **FALSE**.

**D - position (1 bit):** A bit that specifies whether the change made by the reviewer to the position of the *corresponding shape* in the **OfficeArtDgContainer** record ([MS-ODRAW] section 2.2.13 ) is not displayed.

**E - recolorInfo (1 bit):** A bit that specifies whether the changes made by the reviewer to the [RecolorInfoAtom](#Section_01ac11fb62734b36932d39b861eb144c) record contained within the *corresponding shape* are not displayed.

**F - externalObject (1 bit):** A bit that specifies whether the changes made by the reviewer to the *corresponding external object* referenced from within the *corresponding shape* is not displayed.

Let the *corresponding external object* be an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d) that is specified by either the **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) or the **ExOleObjAtom** record (section [2.10.12](#Section_a35170168e3245859a42adae02eea798)) whose **exObjId** field equals the **exObjIdRef** field of [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f) record contained within the *corresponding shape*.

**G - interactiveInfoOnOver (1 bit):** A bit that specifies whether the changes made by the reviewer to the [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) record contained within the *corresponding shape* are not displayed.

**H - interactiveInfoOnClick (1 bit):** A bit that specifies whether the changes made by the reviewer to the [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) record contained within the *corresponding shape* are not displayed.

**I - reserved1 (1 bit):** MUST be zero and MUST be ignored.

**J - msopsid3DSettings (1 bit):** A bit that specifies whether the changes made by the reviewer to the 3D object ([MS-ODRAW] section 2.3.15), 3D Style ([MS-ODRAW] section 2.3.16), and perspective style ([MS-ODRAW] section 2.3.14) properties of the *corresponding shape* are not displayed.

**K - msopsidBWSettings (1 bit):** A bit that specifies whether the changes made by the reviewer to the **bWMode** ([MS-ODRAW] section 2.3.2.3), **bWModePureBW** ([MS-ODRAW] section 2.3.2.4), and **bWModeBW** ([MS-ODRAW] section 2.3.2.5) properties of the *corresponding shape* are not displayed.

**L - msopsidAutoShape (1 bit):** A bit that specifies whether the changes made by the reviewer to the shape type in the **OfficeArtFSP** record ([MS-ODRAW] section 2.2.40) and the callout ([MS-ODRAW] section 2.3.3) properties of the *corresponding shape* are not displayed.

**M - msopsidLineStyle (1 bit):** A bit that specifies whether the changes made by the reviewer to the line style properties ([MS-ODRAW] section 2.3.8) of the *corresponding shape* are not displayed.

**N - msopsidFillStyle (1 bit):** A bit that specifies whether the changes made by the reviewer to the fill style properties ([MS-ODRAW] section 2.3.7) of the *corresponding shape* are not displayed.

**O - msopsidShadowStyle (1 bit):** A bit that specifies whether the changes made by the reviewer to the shadow style properties ([MS-ODRAW] section 2.3.13) of the *corresponding shape* are not displayed.

**P - msopsidWordArt (1 bit):** A bit that specifies whether the changes made by the reviewer to the geometry text properties ([MS-ODRAW] section 2.3.22) of the *corresponding shape* are not displayed.

**Q - msopsidPicture (1 bit):** A bit that specifies whether the changes made by the reviewer to the blip properties ([MS-ODRAW] section 2.3.23) of the *corresponding shape* are not displayed.

**R - msopsidOrientation (1 bit):** A bit that specifies whether the changes made by the reviewer to the transform properties ([MS-ODRAW] section 2.3.18 and [MS-ODRAW] section 2.3.19) of the *corresponding shape* are not displayed.

**S - msopsidTextSetting (1 bit):** A bit that specifies whether the changes made by the reviewer to the text properties ([MS-ODRAW] section 2.3.21) of the *corresponding shape* are not displayed.

**T - reserved2 (1 bit):** MUST be zero and MUST be ignored.

**U - msopsidSize (1 bit):** A bit that specifies whether the changes made by the reviewer to the [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) record contained within the *corresponding shape* are not displayed.

**V - reserved3 (1 bit):** MUST be zero and MUST be ignored.

**W - ruler (1 bit):** A bit that specifies whether the changes made by the reviewer to the [TextRulerAtom](#Section_e8487b82d9664193a6752b39f4adf647) record of the [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record contained within the correspondingshape are not displayed.

**reserved4 (9 bits):** MUST be zero and MUST be ignored.

**textDiff (32 bytes):** An optional [TextDiffContainer](#Section_51f0806e0d314075b25784d19dbe6ca5) record that specifies how to display the changes made by the reviewer to the OfficeArtClientTextbox record contained within the correspondingshape.

**recolorInfoDiff (32 bytes):** An optional [RecolorInfoDiffContainer](#Section_f3301c55be65413c824042f97e72ae65) record that specifies how to display the changes made by the reviewer to the RecolorInfoAtom record contained within the *corresponding shape*.

**externalObjDiff (32 bytes):** An optional [ExternalObjectDiffContainer](#Section_abb251c1a17a419a8519e799dc1e4721) record that specifies how to display the changes made by the reviewer to the external object referenced from within the *corresponding shape*.

**clickInteractiveInfoDiff (32 bytes):** An optional [InteractiveInfoDiffContainer](#Section_b3fac6098b6e4b67b7a200a41f8765d6) record that specifies how to display the changes made by the reviewer to the MouseClickInteractiveInfoContainer record contained within the *corresponding shape*.

**overInteractiveInfoDiff (32 bytes):** An optional InteractiveInfoDiffContainer record that specifies how to display the changes made by the reviewer to the MouseOverInteractiveInfoContainer record contained within the *corresponding shape*.

#### TextDiffContainer

*Referenced by:* [*ShapeDiffContainer*](#Section_c1ec712373fc4f01a3085935234abe33)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the text of a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

Let the *corresponding shape* be as specified in the ShapeDiffContainer record that contains this **TextDiffContainer** record.

Let the *corresponding text* be as specified in the [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record contained within the *corresponding shape*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_TextDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**B - wordList (1 bit):** A **bit** that specifies whether the changes made by the reviewer to the *corresponding text* are not displayed.

**reserved2 (29 bits):** MUST be zero and MUST be ignored.

#### RecolorInfoDiffContainer

*Referenced by:* [*ShapeDiffContainer*](#Section_c1ec712373fc4f01a3085935234abe33)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the [RecolorInfoAtom](#Section_01ac11fb62734b36932d39b861eb144c) record contained within the *corresponding shape*.

Let the *corresponding shape* be as specified in the ShapeDiffContainer record that contains this **RecolorInfoDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_RecolorInfoDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

#### ExternalObjectDiffContainer

*Referenced by:* [*ShapeDiffContainer*](#Section_c1ec712373fc4f01a3085935234abe33)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d).

Let the *corresponding shape* be as specified in the ShapeDiffContainer record that contains this **ExternalObjectDiffContainer** record.

Let the *corresponding external object* be specified by one of the container records listed in the following table that contains a field, also listed in the table, that matches the **exObjIdRef** field of the [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f)record contained within the *corresponding shape*.

| External object container | Field |
| --- | --- |
| [ExAviMovieContainer](#Section_b434673370da4a3098d7b2e026d0d7cb) | **exVideo.exMediaAtom.exObjId** |
| [ExMCIMovieContainer](#Section_e6094ce87fb74c91aa111a02f1ee03d8) | **exVideo.exMediaAtom.exObjId** |
| [ExCDAudioContainer](#Section_fbe8267c2370443c9d6499b24d4248e9) | **exMediaAtom.exObjId** |
| [ExMIDIAudioContainer](#Section_43c4d032436f4108a9ae4ea1d339db8b) | **exMediaAtom.exObjId** |
| [ExWAVAudioEmbeddedContainer](#Section_2b70ee326217416b8841540f51f8e3af) | **exMedia.exObjId** |
| [ExWAVAudioLinkContainer](#Section_e16f324952764f8fa4b4483f6aa08cf1) | **exMedia.exObjId** |
| **ExControlContainer** (section [2.10.10](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)) | **exOleObjAtom.exObjId** |
| **ExOleEmbedContainer** (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229)) | **exOleObjAtom.exObjId** |
| **ExOleLinkContainer** (section [2.10.29](#Section_5311e92722f04e559f439142998efbd1)) | **exOleObjAtom.exObjId** |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| rhs.fIndex | MUST be 0. |
| rhs.gmiTag | MUST be [Diff\_ExternalObjectDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

#### InteractiveInfoDiffContainer

*Referenced by:* [*ShapeDiffContainer*](#Section_c1ec712373fc4f01a3085935234abe33)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) or [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) record contained within the *corresponding shape*.

Let the *corresponding shape* be as specified in the ShapeDiffContainer record that contains this **InteractiveInfoDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | The value 0x00 specifies display information for the changes to the MouseOverInteractiveInfoContainer record contained within the *corresponding shape*.  The value 0x01 specifies display information for the changes to the MouseClickInteractiveInfoContainer record contained within the *corresponding shape*. |
| **rhs.gmiTag** | MUST be [Diff\_InteractiveInfoDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

#### TableListDiffContainer

*Referenced by:* [*MainMasterDiffContainer*](#Section_d9a1101e91ae43d7a5f9627c3e05f91a)*,* [*SlideDiffContainer*](#Section_899d425cba9b4a3eb5ab64f65b2897f3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to [**table objects**](#gt_06346f29-9db8-4503-b9d4-a4b4480fdc63).

Let the *corresponding slide* or *corresponding main master slide* be as specified in the SlideDiffContainer or MainMasterDiffContainer record that contains this **TableListDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTableDiff (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_TableListDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

**rgTableDiff (variable):** An array of [TableDiffContainer](#Section_a3e432fbcc1547eebb2fc7f5838118e9) records that specifies how to display changes made by the reviewer to the table objects in the *corresponding slide* or *corresponding main master slide*. The size, in bytes, of the array is specified by the following formula:

1. rhs.rh.recLen -rhs.rhAtom.recLen - 8

#### TableDiffContainer

*Referenced by:* [*TableListDiffContainer*](#Section_ca72b575025f4d6da4b6bcb00527b746)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to a [**table object**](#gt_06346f29-9db8-4503-b9d4-a4b4480fdc63).

Let the *corresponding slide* or *corresponding main master slide* be as specified in the TableListDiffContainer record that contains this **TableDiffContainer** record.

The ith**TableDiffContainer** record in its parent TableListDiffContainer record specifies how to display changes made to the ith *corresponding table object* contained within the *corresponding slide* or *corresponding main master slide*.

Let the *corresponding table object* be specified by the **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) such that the **tableProperties.fIsTable** field of the **tableProperties** property ([MS-ODRAW] section 2.3.4.36) MUST be **TRUE**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_TableDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - addTable (1 bit):** A **bit** that specifies whether the addition of the *corresponding table object* made by the reviewer in the *corresponding slide* or *corresponding main master slide* is not displayed.

**B - deleteTable (1 bit):** A **bit** that specifies whether the deletion of the *corresponding table object* made by the reviewer in the *corresponding slide* or *corresponding main master slide* is not displayed.

**C - modifiedTable (1 bit):** A **bit** that specifies whether the changes made by the reviewer to the *corresponding table object* are not displayed.

**D - position (1 bit):** A **bit** that specifies whether the change made by the reviewer to the z-order of the *corresponding table object* is not displayed.

**reserved (28 bits):** MUST be zero and MUST be ignored.

#### SlideShowDiffContainer

*Referenced by:* [*SlideDiffContainer*](#Section_899d425cba9b4a3eb5ab64f65b2897f3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display changes made by the reviewer to the [SlideShowSlideInfoAtom](#Section_10dc4455c5d8472086468cde8644a040) record contained within the *corresponding slide*.

Let the *corresponding slide* be as specified in the SlideDiffContainer record that contains this **SlideShowDiffContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_SlideShowDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**reserved (32 bits):** MUST be zero and MUST be ignored.

#### NotesDiffContainer

*Referenced by:* [*MainMasterDiffContainer*](#Section_d9a1101e91ae43d7a5f9627c3e05f91a)*,* [*SlideDiffContainer*](#Section_899d425cba9b4a3eb5ab64f65b2897f3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies how to display the changes made by the reviewer to the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a) or to a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

Let the *corresponding reviewer document* be as specified in the [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) record that contains this **NotesDiffContainer** record.

Let the *corresponding slide* be as specified in the SlideDiffContainer record that contains this **NotesDiffContainer** record or let the *corresponding main master slide* be as specified in the MainMasterDiffContainer record that contains this **NotesDiffContainer** record.

Let the *corresponding notes slide* be the **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) as specified by the **slideAtom.notesIdRef** field of the *corresponding slide* or let the *corresponding notes master slide* be as specified by the **notesMasterPersistIdRef** field of the **DocumentAtom** record (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)) in the correspondingreviewer document.

Let the *corresponding notes shape* be specified by the **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) contained in the *corresponding notes slide* or *corresponding notes master slide* such that the **placementId** field of the [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) record contained within the **OfficeArtSpContainer** record has the value of [PT\_NotesBody](#Section_dbfd04be077644d9b408b07f4c951eaf).

Let the *corresponding notes text* be as specified in the [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record contained within the *corresponding notes shape*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rhs (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rhs (28 bytes):** A [DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) structure that specifies the header for the container record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rhs.fIndex** | MUST be 0x00. |
| **rhs.gmiTag** | MUST be [Diff\_NotesDiff](#Section_ef8a54b2da854dbab9a60131d8f579c7). |

**A - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**B - wordList (1 bit):** A **bit** that specifies whether the change made by the reviewer to the *corresponding notes text* is not displayed. It MUST be **FALSE** if the *corresponding notes text* is contained within the *corresponding notes master slide*.

**reserved2 (29 bits):** MUST be zero and MUST be ignored.

### View Info Types

#### GridSpacing10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies spacing for a grid that can be used to align objects on a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) and to display positioning cues. Only square grids are allowed.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_GridSpacing10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**x (4 bytes):** A signed integer that specifies horizontal grid spacing in [**grid units**](#gt_32044597-ac47-41de-9f40-bb5e01dc0d5f). It MUST be greater than or equal to 0x00005AB8 or 1 mm and less than or equal to 0x00120000 or 2 inches. It MUST be equal to **y**.

**y (4 bytes):** A signed integer that specifies vertical grid spacing in grid units. It MUST be greater than or equal to 0x00005AB8 or 1 mm and less than or equal to 0x00120000 or 2 inches. It MUST be equal to **x**.

#### NormalViewSetInfoContainer

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the simultaneous display of all [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192), a specific presentation slide, and the text of the [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) associated with that specific presentation slide.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| normalViewSetInfoAtom (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_NormalViewSetInfo9** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.Len** | MUST be 0x0000001C. |

**normalViewSetInfoAtom (28 bytes):** A [NormalViewSetInfoAtom](#Section_b906d23a45d244a2b486545f21676ecd) record that specifies the display preferences.

#### NormalViewSetInfoAtom

*Referenced by:* [*NormalViewSetInfoContainer*](#Section_5b7a13338de24c50a83838c389db3147)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the appearance of different regions in a user interface view that consists of three content panes: a side content pane, a slide pane, and a notes text pane.

The side content pane can contain either thumbnail images of [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) in the presentation or a text outline of the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae). It occupies the full height of the view and is separated from the slide pane and notes text pane by a vertical bar. It occupies the left edge of the view if the **fRightToLeft** field of the **DocumentAtom** record (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)) is **FALSE** and the right edge of the view if the **fRightToLeft** field of the **DocumentAtom** record is **TRUE**.

The remainder of the view not occupied by the side content region is divided vertically by a horizontal bar. The slide pane displays a single presentation slide and is located above the horizontal bar. The notes text pane displays the text of the [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) associated with the presentation slide and is located beneath the horizontal bar.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| leftPortion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| topPortion | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| vertBarState | | | | | | | | horizBarState | | | | | | | | fPreferSingleSet | | | | | | | | A | B | reserved | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_NormalViewSetInfo9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014 |

**leftPortion (8 bytes):** A **RatioStruct** structure (section [2.12.6](#Section_32cd4da38d474599ace5d608331e1214)) that specifies the width of the side content pane as a percentage of the view’s width. The value of **leftPortion.numer** / **leftPortion.denom** MUST be greater than or equal to 0 and less than or equal to 1.

**topPortion (8 bytes):** A **RatioStruct** structure that specifies the height of the slide pane as a percentage of the view’s height. The value of **topPortion.numer** / **topPortion.denom** MUST be greater than or equal to 0 and less than or equal to 1.

**vertBarState (1 byte):** A [**NormalViewSetBarStates**](#Section_9ead9648630049599db0bc8b74770e6c) enumeration that specifies the state of the vertical bar that separates the side content pane from the slide pane and notes text pane. If the value is BS\_Minimized or BS\_Maximized, the value of **leftPortion** MUST be ignored.

**horizBarState (1 byte):** A **NormalViewSetBarStates** enumeration that specifies the state of the horizontal bar that separates the slide pane from the notes text pane. If the value is BS\_Minimized or BS\_Maximized, the value of **topPortion** MUST be ignored.

**fPreferSingleSet (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether the view consists of only the slide pane or all three panes. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x01 | The slide pane occupies the entire view. |
| 0x00 | All three panes exist in the view. |

**A - fHideThumbnails (1 bit):** A bit that specifies the content of the side content pane. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x1 | The side content pane contains a text outline of the presentation. |
| 0x0 | The side content pane contains thumbnail images of the presentation slides. |

**B - fBarSnapped (1 bit):** A bit that specifies whether the vertical bar is snapped to specific positions when resized.

**reserved (6 bits):** MUST be zero and MUST be ignored.

#### NotesTextViewInfoContainer

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the display of the text on the [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| zoomViewInfo (60 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_NotesTextViewInfo9** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**zoomViewInfo (60 bytes):** An optional [ZoomViewInfoAtom](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) record that specifies origin and scaling information.

#### ZoomViewInfoAtom

*Referenced by:* [*NotesTextViewInfoContainer*](#Section_caacc34d988c4cbc99f7a4bdf808e723)*,* [*NotesViewInfoContainer*](#Section_96636c7591464d128099f0f50e382b71)*,* [*SlideViewInfoContainer*](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies origin and scaling information for a view that can be zoomed beyond 100 percent.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| curScale (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused1 (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| origin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fUseVarScale | | | | | | | | fDraftMode | | | | | | | | unused2 | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ViewInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000034. |

**curScale (16 bytes):** A [ScalingStruct](#Section_b2cf89e0d255468fa571effd2b34b5b0) structure that specifies the scaling of content in the view. Sub fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **curScale.x** | Specifies scaling of the *x*-axis. The value of  **curScale.x.numer** / **curScale.x.denom**  MUST be greater than or equal to 0.10 and less than or equal to 4.0. |
| **curScale.y** | Specifies the scaling of the *y*-axis. The value of  **curScale.y.numer** / **curScale.y.denom**  MUST be equal to  **curScale.x.numer** / **curScale.x.denom**. |

**unused1 (24 bytes):** Undefined and MUST be ignored.

**origin (8 bytes):** A **PointStruct** structure (section [2.12.5](#Section_5faffdc98cdf4bd0a2289a122d01b3f2)) that specifies a position in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb), relative to the top-left corner of the full view, that is displayed in the top-left corner of the displayable view area.

**fUseVarScale (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies how content is scaled. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | Content is scaled as specified by **curScale**. |
| 0x01 | The scale varies with the size of the view such that the complete [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) occupies the entire view. |

**fDraftMode (1 byte):** A **bool1** that specifies whether the view is displayed with less formatting.

**unused2 (2 bytes):** Undefined and MUST be ignored.

#### OutlineViewInfoContainer

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the display of the text on the [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| noZoomViewInfo (60 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_OutlineViewInfo** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**noZoomViewInfo (60 bytes):** An optional [NoZoomViewInfoAtom](#Section_377e8d7886934fecb31caa890909f4b3) record that specifies origin and scaling information.

#### NoZoomViewInfoAtom

*Referenced by:* [*OutlineViewInfoContainer*](#Section_39073741a8dd47bdb94f857a2850ff62)*,* [*SorterViewInfoContainer*](#Section_7184066996c54d7a9a9aeb5184c1626e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies origin and scaling information for a view that cannot be zoomed beyond 100 percent.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| curScale (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused1 (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| origin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused2 | | | | | | | | fDraftMode | | | | | | | | unused3 | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ViewInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000034. |

**curScale (16 bytes):** A [ScalingStruct](#Section_b2cf89e0d255468fa571effd2b34b5b0) structure that specifies the scaling of content in the view. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **curScale.x** | Specifies scaling of the *x*-axis. The value of  **curScale.x.numer** / **curScale.x.denom**  MUST be greater than or equal to 0.20 and less than or equal to 1.0. |
| **curScale.y** | Specifies scaling of the *y*-axis. The value of  **curScale.y.numer** / **curScale.y.denom**  MUST be equal to  **curScale.x.numer** / **curScale.x.denom**. |

**unused1 (24 bytes):** Undefined and MUST be ignored.

**origin (8 bytes):** A **PointStruct** structure (section [2.12.5](#Section_5faffdc98cdf4bd0a2289a122d01b3f2)) that specifies a position in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb), relative to the top-left corner of the full view, that is displayed in the top-left corner of the displayable view area.

**unused2 (1 byte):** Undefined and MUST be ignored.

**fDraftMode (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether the view is displayed with less formatting.

**unused3 (2 bytes):** Undefined and MUST be ignored.

#### SlideViewInfoInstance

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A variable type record whose type and meaning are dictated by the value of **rh.recInstance**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x000 | A **SlideViewInfoContainer** record (section [2.4.21.9](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the display of [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192). |
| 0x001 | A **NotesViewInfoContainer** record (section [2.4.21.12](#Section_96636c7591464d128099f0f50e382b71)) that specifies display preferences for when a user interface shows the presentation in a manner optimized for the display of [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65). |

#### SlideViewInfoContainer

*Referenced by:* [*SlideViewInfoInstance*](#Section_b2b53b7fd4c145a9948e3e0e7d168164)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the display of [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideViewInfoAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | zoomViewInfoAtom (60 bytes, optional) | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | rgGuideAtom (variable) | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_SlideViewInfo** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**slideViewInfoAtom (11 bytes):** A [SlideViewInfoAtom](#Section_bb7145715b154cd8a28c4437c4e1ad15) record that specifies editing preferences for content positioning.

**zoomViewInfoAtom (60 bytes):** An optional [ZoomViewInfoAtom](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) record that specifies origin and scaling information.

**rgGuideAtom (variable):** An array of [GuideAtom](#Section_b5cc09d93f104eabb204ba88552dc1ec) records that specifies [**guides**](#gt_72e90d75-e503-4e18-a925-64587678e12e) for the slide view. It MUST NOT contain more than eight GuideAtom records with **type** equal to 0x00000000 (horizontal) and MUST NOT contain more than eight GuideAtom records with **type** equal to 0x00000001 (vertical). The array continues while **rh.recType** of the GuideAtom record is equal to RT\_GuideAtom.

#### SlideViewInfoAtom

*Referenced by:* [*NotesViewInfoContainer*](#Section_96636c7591464d128099f0f50e382b71)*,* [*SlideViewInfoContainer*](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies editing preferences for content positioning.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused | | | | | | | | fSnapToGrid | | | | | | | | fSnapToShape | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideViewInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000003. |

**unused (1 byte):** Undefined and MUST be ignored.

**fSnapToGrid (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies an editing preference that the position of a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) aligns to the grid specified by the [GridSpacing10Atom](#Section_e40174dc118f46c38c6198f63d426f44) record.

**fSnapToShape (1 byte):** A **bool1** that specifies an editing preference that the position of a shape aligns to the position of other shapes.

#### GuideAtom

*Referenced by:* [*NotesViewInfoContainer*](#Section_96636c7591464d128099f0f50e382b71)*,* [*SlideViewInfoContainer*](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**guide**](#gt_72e90d75-e503-4e18-a925-64587678e12e). A guide can be used to align objects on a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) and to display visual positioning cues.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pos | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x007. |
| **rh.recType** | MUST be [RT\_GuideAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**type (4 bytes):** An **unsigned integer** that specifies whether the guide is horizontal or vertical. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | The guide is horizontal. |
| 0x00000001 | The guide is vertical. |

**pos (4 bytes):** A **signed integer** that specifies the position of the guide in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb) relative to the top-left corner of the slide. It MUST be greater than or equal to -15840 or -27.5 inches and less than or equal to 32255 or 56 inches. Typical values range from zero to slide height for a horizontal guide and from zero to slide width for a vertical guide.

#### NotesViewInfoContainer

*Referenced by:* [*SlideViewInfoInstance*](#Section_b2b53b7fd4c145a9948e3e0e7d168164)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the display of [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideViewInfoAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | zoomViewInfoAtom (60 bytes, optional) | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | rgGuideAtom (variable) | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_SlideViewInfo** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**slideViewInfoAtom (11 bytes):** A [SlideViewInfoAtom](#Section_bb7145715b154cd8a28c4437c4e1ad15) record that specifies editing preferences for content positioning.

**zoomViewInfoAtom (60 bytes):** An optional [ZoomViewInfoAtom](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) record that specifies origin and scaling information.

**rgGuideAtom (variable):** An array of [GuideAtom](#Section_b5cc09d93f104eabb204ba88552dc1ec) records that specifies [**guides**](#gt_72e90d75-e503-4e18-a925-64587678e12e) for the notes view. It MUST NOT contain more than eight GuideAtom records with **type** equal to 0x00000000 (horizontal) and MUST NOT contain more than eight GuideAtom records with **type** equal to 0x00000001 (vertical). The array continues while **rh.recType** of the GuideAtom record is equal to RT\_GuideAtom.

#### SorterViewInfoContainer

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies display preferences for when a user interface shows the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) in a manner optimized for the simultaneous display of multiple [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| viewInfo (60 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_SorterViewInfo** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**viewInfo (60 bytes):** An optional [NoZoomViewInfoAtom](#Section_377e8d7886934fecb31caa890909f4b3) record that specifies origin and scaling information.

### Summary Info Types

#### CopyrightAtom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies copyright information.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| copyright (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**copyright (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies copyright information. The length, in bytes, of the field is specified by **rh.recLen**.

#### KeywordsAtom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies keyword information.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| keywords (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 510. |

**keywords (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies keyword information. The length, in bytes, of the field is specified by **rh.recLen**.

#### SummaryContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c) information.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkCollection (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Summary](#Section_38fb1fa50a62477a8b14178df22de812). |

**bookmarkCollection (variable):** A [BookmarkCollectionContainer](#Section_7effe2aab7ab4318884b5b19c12e0ec7) record that specifies the bookmarks.

#### BookmarkCollectionContainer

*Referenced by:* [*SummaryContainer*](#Section_446dee5f73d04ea3bc6d04afeadfd6e8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a collection of [**bookmarks**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkSeedAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgBookmarkEntity (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_BookmarkCollection](#Section_38fb1fa50a62477a8b14178df22de812). |

**bookmarkSeedAtom (12 bytes):** A [BookmarkSeedAtom](#Section_0fc3da910db242eb9128ca850db20ab6) record that specifies the identifier to use when creating a new bookmark.

**rgBookmarkEntity (variable):** An array of [BookmarkEntityAtomContainer](#Section_ce4e89a1983e45e997040f804e1b84cd) records that specifies the bookmarks. The size, in bytes, of the array is specified by the following formula:

1. rh.recLen – 12

#### BookmarkSeedAtom

*Referenced by:* [*BookmarkCollectionContainer*](#Section_7effe2aab7ab4318884b5b19c12e0ec7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) value to use when creating new [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c) identifiers.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkIdSeed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be [RT\_BookmarkSeedAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**bookmarkIdSeed (4 bytes):** An unsigned integer that specifies a seed for creating a new bookmark identifier. It MUST be greater than all existing bookmark identifier values specified by the **bookmarkID** field of the [BookmarkEntityAtom](#Section_a2f2dfbe96e6466eb37b3310416a47ec) records and the **bookmarkID** field of the [TextBookMarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1) records.

#### BookmarkEntityAtomContainer

*Referenced by:* [*BookmarkCollectionContainer*](#Section_7effe2aab7ab4318884b5b19c12e0ec7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about a [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkEntityAtom (76 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkValueAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recType** | MUST be [RT\_BookmarkEntityAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**bookmarkEntityAtom (76 bytes):** A [BookMarkEntityAtom](#Section_a2f2dfbe96e6466eb37b3310416a47ec) record that specifies how to link text to a bookmark.

**bookmarkValueAtom (variable):** A [BookmarkValueAtom](#Section_4dc746d99d91462396eaa1256e728534) record that specifies the text value of the bookmark. This field MUST be the same as the text referred to by the associated [TextBookMarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1) record referred to by the **bookmarkId** field of the **bookmarkEntityAtom** in this record.

#### BookmarkEntityAtom

*Referenced by:* [*BookmarkEntityAtomContainer*](#Section_ce4e89a1983e45e997040f804e1b84cd)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information used to link the [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c) records in the text itself to the bookmarks in the [Summary Information Stream](#Section_dfea964e936f42bb838c3fc19909cc32).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkName (64 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_BookmarkEntityAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000044. |

**bookmarkId (4 bytes):** An unsigned integer that specifies this bookmark identifier. It MUST be the same as the **bookmarkID** field of a [TextBookMarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1) record.

**bookmarkName (64 bytes):** A [char2](#Section_2bd860f7f6144ed0a0ad5520e82856b7) that specifies the name of a bookmark. The name MUST NOT be empty. The name SHOULD be the same as one of the **PropertyIdentifierAndOffset.PropertyIdentifier** fields, as specified in [[MS-OLEPS]](%5bMS-OLEPS%5d.pdf#Section_bf7aeae8c47a49399f45700158dac3bc) section [2.19](http://msdn.microsoft.com/en-us/library/f59e6c94-a0ae-4d1b-85d3-f01c35779a22/), in the Summary Information Stream.

#### BookmarkValueAtom

*Referenced by:* [*BookmarkEntityAtomContainer*](#Section_ce4e89a1983e45e997040f804e1b84cd)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the value of a [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkValue (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be greater than zero and less than or equal to 510. |

**bookmarkValue (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the value of this bookmark. The length, in bytes, of the field is specified by **rh.recLen**.

### Document Tag Info Types

#### DocProgTagsContainer

*Referenced by:* [*DocInfoListSubContainerOrAtom*](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional document data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | SHOULD[<15>](#Appendix_A_15" \o "Product behavior note 15) be 0x000. |
| **rh.recType** | MUST be **RT\_ProgTags** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**rgChildRec (variable):** An array of [DocProgTagsSubContainerOrAtom](#Section_0d1a5da5dcab4b3f8c97b79d74321e37) records that specifies the programmable tags. The size, in bytes, of the array is specified by **rh.recLen**. The array MUST NOT contain more than one of each of the following records: [PP9DocBinaryTagExtension](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0), [PP10DocBinaryTagExtension](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed), [PP11DocBinaryTagExtension](#Section_662c3a59f11d4d3fb472c695b4e598a8), [PP12DocBinaryTagExtension](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7).

#### DocProgTagsSubContainerOrAtom

*Referenced by:* [*DocProgTagsContainer*](#Section_6965e9a7d4314707b789081a6a9c7b8f)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_ProgStringTag](#Section_38fb1fa50a62477a8b14178df22de812) | A [ProgStringTagContainer](#Section_4c2f2168082c433d8356471fa54af929) record that specifies additional document data. |
| RT\_ProgBinaryTag | A [DocProgBinaryTagContainer](#Section_96d2ece1800548ebbbae0fd8f55f2f63) record that specifies additional document data. |

#### DocProgBinaryTagContainer

*Referenced by:* [*DocProgTagsSubContainerOrAtom*](#Section_0d1a5da5dcab4b3f8c97b79d74321e37)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional binary document data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ProgBinaryTag](#Section_38fb1fa50a62477a8b14178df22de812). |

**rec (variable):** A [DocProgBinaryTagSubContainerOrAtom](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d) record that specifies additional document data.

#### DocProgBinaryTagSubContainerOrAtom

*Referenced by:* [*DocProgBinaryTagContainer*](#Section_96d2ece1800548ebbbae0fd8f55f2f63)

A variable type record whose type and meaning are dictated by the value of **tagNameAtom.tagName** for [UnknownBinaryTag](#Section_4f7ad45eb5844a93b481894f5c671160) or by the value of **tagName** for [PP9DocBinaryTagExtension](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0), [PP10DocBinaryTagExtension](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed), [PP11DocBinaryTagExtension](#Section_662c3a59f11d4d3fb472c695b4e598a8), [PP12DocBinaryTagExtension](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7), as specified in the following table.

| Value | Meaning |
| --- | --- |
| "\_\_\_PPT9" | A PP9DocBinaryTagExtension record pair that specifies additional document data. It MAY[<16>](#Appendix_A_16" \o "Product behavior note 16) be ignored and MUST be preserved. |
| "\_\_\_PPT10" | A PP10DocBinaryTagExtension record pair that specifies additional document data. It MAY[<17>](#Appendix_A_17" \o "Product behavior note 17) be ignored and MUST be preserved. |
| "\_\_\_PPT11" | A PP11DocBinaryTagExtension record pair that specifies additional document data. It MAY[<18>](#Appendix_A_18" \o "Product behavior note 18) be ignored and MUST be preserved. |
| "\_\_\_PPT12" | A PP12DocBinaryTagExtension record pair that specifies additional document data. It MAY[<19>](#Appendix_A_19" \o "Product behavior note 19) be ignored and MUST be preserved. |
| Any other value | An UnknownBinaryTag record pair that specifies additional document data. It MUST be ignored and MUST be preserved. |

#### PP9DocBinaryTagExtension

*Referenced by:* [*DocProgBinaryTagSubContainerOrAtom*](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional document data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (14 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | rhData | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | rgTextMasterStyle9 (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| blipCollectionContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textDefaultsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgExternalHyperlink9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| presAdvisorFlagsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| envelopeDataAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| envelopeFlagsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| htmlDocInfoAtom (24 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| htmlPublishInfoAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgBroadcastDocInfo9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| outlineTextPropsContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x0000000E. |

**tagName (14 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT9".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**rgTextMasterStyle9 (variable):** An array of [TextMasterStyle9Atom](#Section_7e0b6a7e059145769dd02305bd8c0323) records that specifies additional character-level and paragraph-level formatting of [**main master slides**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). The array continues while **rh.recType** of the TextMasterStyle9Atom is equal to RT\_TextMasterStyle9Atom.

**blipCollectionContainer (variable):** An optional **BlipCollection9Container** record (section [2.9.72](#Section_8a93931e05c148be8824deb1c4489c14)) that specifies information about picture bullet points.

**textDefaultsAtom (variable):** An optional [TextDefaults9Atom](#Section_ab49e0370973424eb155250559a98723) record that specifies additional default character-level and paragraph-level formatting.

**kinsokuContainer (variable):** An optional **Kinsoku9Container** (section [2.9.6](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)) that specifies the user preferences for East Asian text line break settings.

**rgExternalHyperlink9 (variable):** An array of [ExHyperlink9Container](#Section_c021ee00af9c4673bd69e3d49f3668df) records that specifies additional information about [**hyperlinks**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e). The array continues while **rh.recType** of the ExHyperlink9Container record is equal to RT\_ExternalHyperlink9.

**presAdvisorFlagsAtom (12 bytes):** An optional [PresAdvisorFlags9Atom](#Section_866dc2301b1947bca5a41160b18e846e) record that specifies Presentation Assistant settings. It SHOULD[<20>](#Appendix_A_20" \o "Product behavior note 20) be ignored.

**envelopeDataAtom (variable):** An optional [EnvelopeData9Atom](#Section_a156cedf061d45678f2b0fa9cb08a7ee) record that specifies data for an [**envelope**](#gt_7a872c88-cf9d-4132-ba8b-4930f775dd27). It SHOULD[<21>](#Appendix_A_21" \o "Product behavior note 21) be ignored.

**envelopeFlagsAtom (12 bytes):** An optional [EnvelopeFlags9Atom](#Section_692189fb057b48e6b195a7689e8e3c0f) record that specifies information about an envelope. It SHOULD[<22>](#Appendix_A_22" \o "Product behavior note 22) be ignored.

**htmlDocInfoAtom (24 bytes):** An optional [HTMLDocInfo9Atom](#Section_9f9b9371093248ffa775cac417c466ef) record that specifies settings how to publish a document as a Web page.

**htmlPublishInfoAtom (variable):** An optional [HTMLPublishInfo9Container](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29) record that contains additional information specifying how to publish a document as a Web page.

**rgBroadcastDocInfo9 (variable):** An array of [BroadcastDocInfo9Container](#Section_e48938ffa37e4054ad394315cabbbfe0) records that specifies settings for a [**presentation broadcast**](#gt_1f3b250d-2769-46f2-bba8-c48a61364560). The array continues while **rh.recType** of the BroadcastDocInfo9Container is equal to RT\_BroadcastDocInfo9. It SHOULD[<23>](#Appendix_A_23" \o "Product behavior note 23) be ignored.

**outlineTextPropsContainer (variable):** An optional [OutlineTextProps9Container](#Section_6eb16c7f6b6848dbace37347326b3a9d) record that specifies additional text properties for outline text.

#### PP10DocBinaryTagExtension

*Referenced by:* [*DocProgBinaryTagSubContainerOrAtom*](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional document data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontCollectionContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTextMasterStyle10 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textDefaultsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| gridSpacingAtom (16 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgCommentIndex10 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontEmbedFlagsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| copyrightAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| keywordsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| filterPrivacyFlagsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| outlineTextPropsContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| docToolbarStatesAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | slideListTableContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgDiffTree10Container (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| modifyPasswordAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| photoAlbumInfoAtom (14 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT10".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**fontCollectionContainer (variable):** An optional **FontCollection10Container** record (section [2.9.11](#Section_8c62fed6394f4c49ae8aa73c2a8026d1)) that specifies information about additional fonts in the presentation.

**rgTextMasterStyle10 (variable):** An array of [TextMasterStyle10Atom](#Section_72dd8636450c451fa60d9faddcff72be) records that specifies additional character-level and paragraph-level formatting of [**main master slides**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). The array continues while **rh.recType** of the TextMasterStyle10Atom record is equal to RT\_TextMasterStyle10Atom.

**textDefaultsAtom (variable):** An optional [TextDefaults10Atom](#Section_43975b61904e46c38d4bec08ed1fcb22) record that specifies additional default character-level formatting.

**gridSpacingAtom (16 bytes):** A [GridSpacing10Atom](#Section_e40174dc118f46c38c6198f63d426f44) record that specifies spacing for a grid that can be used to align objects on a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) and to display positioning cues.

**rgCommentIndex10 (variable):** An array of [CommentIndex10Container](#Section_0655d45268fc400fbb377a9157f09126) records that specifies information for [**presentation comments**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9) in the document. The array continues while **rh.recType** of the CommentIndex10Container item is equal to RT\_CommentIndex10.

**fontEmbedFlagsAtom (12 bytes):** An optional [FontEmbedFlags10Atom](#Section_ec7445456e724d648280d96ac7b28a04) record that specifies how font data is embedded.

**copyrightAtom (variable):** An optional [CopyrightAtom](#Section_9d4029f9d39c4f59910ada60d75c46db) record that specifies copyright information.

**keywordsAtom (variable):** An optional [KeywordsAtom](#Section_a549e2ed7f644b4a927ea22e76ffd213) record that specifies keyword information.

**filterPrivacyFlagsAtom (12 bytes):** An optional [FilterPrivacyFlags10Atom](#Section_016a804e325546a7a353707c8232e542) record that specifies privacy settings.

**outlineTextPropsContainer (variable):** An optional [OutlineTextProps10Container](#Section_6efc6c99ea7546fc8b36ea94a8e3077f) record that specifies additional text properties for outline text.

**docToolbarStatesAtom (9 bytes):** An optional [DocToolbarStates10Atom](#Section_e7b4619ec9ca40da99c76b9cdfe472d7) record that specifies display options for toolbars. It SHOULD[<24>](#Appendix_A_24" \o "Product behavior note 24) be ignored and SHOULD[<25>](#Appendix_A_25" \o "Product behavior note 25) be omitted.

**slideListTableContainer (variable):** An optional [SlideListTable10Container](#Section_42463f5b55c7457598467f4b412228aa) record that specifies additional data about slides in the document. It SHOULD[<26>](#Appendix_A_26" \o "Product behavior note 26) be ignored and SHOULD[<27>](#Appendix_A_27" \o "Product behavior note 27) be omitted.

**rgDiffTree10Container (variable):** An optional array of [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75). The array continues while **rh.recType** of the DiffTree10Container item is equal to RT\_DiffTree10. The array specifies the names of reviewers and how to display the changes of the document made by those reviewers. It SHOULD[<28>](#Appendix_A_28" \o "Product behavior note 28) be ignored and SHOULD[<29>](#Appendix_A_29" \o "Product behavior note 29) be omitted.

**modifyPasswordAtom (variable):** An optional [ModifyPasswordAtom](#Section_6d703306994647f4b206794ddb90585f) record that specifies a password used to modify the document.

**photoAlbumInfoAtom (14 bytes):** An optional [PhotoAlbumInfo10Atom](#Section_2782f287ec64433182bc63fb6eb8c98e) record that specifies user preferences for how to display a presentation as a photo album.

#### PP11DocBinaryTagExtension

*Referenced by:* [*DocProgBinaryTagSubContainerOrAtom*](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional document data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| smartTagStore11 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| outlineTextProps (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT11".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**smartTagStore11 (variable):** An optional **SmartTagStore11Container** record (section [2.11.28](#Section_f6735fdfc53746fb82dfb509a9d80faa)) that specifies smart tag data.

**outlineTextProps (variable):** An optional [OutlineTextProps11Container](#Section_bd93329d5087408e99027355d31ec82e) record that specifies outline text data.

#### PP12DocBinaryTagExtension

*Referenced by:* [*DocProgBinaryTagSubContainerOrAtom*](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional document data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rtDocFlagsAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT12".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**rtDocFlagsAtom (9 bytes):** An optional [RoundTripDocFlags12Atom](#Section_97f683aea7b2430cb4e49b1cc518f35d) record that specifies document level flags. It SHOULD[<30>](#Appendix_A_30" \o "Product behavior note 30) be omitted.

## Slide Types

### SlideContainer

*Referenced by:* [*MasterOrSlideContainer*](#Section_018cc2701573402aa3e8d83e8dc96813)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e).

Let the *corresponding master slide* be the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) or **SlideContainer** record specified by **slideAtom.masterIdRef**.

Let the *corresponding notes slide* be the **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) specified by **slideAtom.notesIdRef**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideAtom (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideShowSlideInfoAtom (24 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| perSlideHFContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rtSlideSyncInfo12 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| drawing (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideSchemeColorSchemeAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideProgTagsContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgRoundTripSlide (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Slide](#Section_38fb1fa50a62477a8b14178df22de812). |

**slideAtom (32 bytes):** A [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) record that specifies information specific to this slide.

**slideShowSlideInfoAtom (24 bytes):** An optional [SlideShowSlideInfoAtom](#Section_10dc4455c5d8472086468cde8644a040) record that specifies [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) transition information.

**perSlideHFContainer (variable):** An optional [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) record that specifies [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) information for this slide. It SHOULD[<31>](#Appendix_A_31" \o "Product behavior note 31) be preserved.

**rtSlideSyncInfo12 (variable):** An optional [RoundTripSlideSyncInfo12Container](#Section_7ab552d5545048f6816b8cbc266d7803) record that specifies round-trip information. It SHOULD[<32>](#Appendix_A_32" \o "Product behavior note 32) be ignored and SHOULD[<33>](#Appendix_A_33" \o "Product behavior note 33) be preserved.

**drawing (variable):** A **DrawingContainer** (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)) that specifies drawing information for this slide.

**slideSchemeColorSchemeAtom (40 bytes):** A [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) record that specifies the [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) for this slide. If **slideAtom.slideFlags.fMasterScheme** is set, then the SlideSchemeColorSchemeAtom record contained by the *corresponding master slide* is used instead.

**slideNameAtom (variable):** An optional [SlideNameAtom](#Section_3b52355ff13f4a20b967be4b42dc6ac5) record that specifies the name of this slide. It SHOULD[<34>](#Appendix_A_34" \o "Product behavior note 34) be preserved.

**slideProgTagsContainer (variable):** An optional [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) record that specifies a list of [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

**rgRoundTripSlide (variable):** An array of [RoundTripSlideRecord](#Section_fe7a9588d2e044d1b9b1ac2962592448) records that specifies round-trip information. The array continues while **rh.recType** of the RoundTripSlideRecord item is equal to one of the following record types: RT\_RoundTripTheme12Atom, RT\_RoundTripColorMapping12Atom, RT\_RoundTripCompositeMasterId12Atom, RT\_RoundTripSlideSyncInfo12, RT\_RoundTripAnimationHashAtom12Atom, RT\_RoundTripAnimationAtom12Atom, or RT\_RoundTripContentMasterId12Atom. Each record type MUST NOT appear more than once.

### RoundTripSlideRecord

*Referenced by:* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_RoundTripTheme12Atom](#Section_38fb1fa50a62477a8b14178df22de812) | A [RoundTripThemeAtom](#Section_a50e597e248a41c8a1c370fd0988d609) record that specifies round-trip information. It SHOULD[<35>](#Appendix_A_35" \o "Product behavior note 35) be ignored and SHOULD[<36>](#Appendix_A_36" \o "Product behavior note 36) be preserved. |
| RT\_RoundTripColorMapping12Atom | A [RoundTripColorMappingAtom](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) record that specifies round-trip information. It SHOULD[<37>](#Appendix_A_37" \o "Product behavior note 37) be ignored and SHOULD[<38>](#Appendix_A_38" \o "Product behavior note 38) be preserved. |
| RT\_RoundTripCompositeMasterId12Atom | A [RoundTripCompositeMasterId12Atom](#Section_ae0701f92b464b6c90a049e7cfb20a7e) record that specifies round-trip information. It SHOULD[<39>](#Appendix_A_39" \o "Product behavior note 39) be ignored and SHOULD[<40>](#Appendix_A_40" \o "Product behavior note 40) be preserved. |
| RT\_RoundTripSlideSyncInfo12 | A [RoundTripSlideSyncInfo12Container](#Section_7ab552d5545048f6816b8cbc266d7803) record that specifies round-trip information. It SHOULD[<41>](#Appendix_A_41" \o "Product behavior note 41) be ignored and SHOULD[<42>](#Appendix_A_42" \o "Product behavior note 42) be preserved. |
| RT\_RoundTripAnimationHashAtom12Atom | A [RoundTripAnimationHashAtom](#Section_c10e75d664d04e53aa84a06134026ed4) record that specifies round-trip information. It SHOULD[<43>](#Appendix_A_43" \o "Product behavior note 43) be ignored and SHOULD[<44>](#Appendix_A_44" \o "Product behavior note 44) be preserved. |
| RT\_RoundTripAnimationAtom12Atom | A [RoundTripAnimationAtom](#Section_6360395dcf04485a920324d5ae5591ec) record that specifies round-trip information. It SHOULD[<45>](#Appendix_A_45" \o "Product behavior note 45) be ignored and SHOULD[<46>](#Appendix_A_46" \o "Product behavior note 46) be preserved. |
| RT\_RoundTripContentMasterId12Atom | A [RoundTripContentMasterId12Atom](#Section_e9a4f7c3f3ac4ba2b94c59a93f77d11b) record that specifies round-trip information. It SHOULD[<47>](#Appendix_A_47" \o "Product behavior note 47) be ignored and SHOULD[<48>](#Appendix_A_48" \o "Product behavior note 48) be preserved. |

### MainMasterContainer

*Referenced by:* [*MasterOrSlideContainer*](#Section_018cc2701573402aa3e8d83e8dc96813)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideAtom (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSchemeListElementColorScheme (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTextMasterStyle (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| roundTripOArtTextStyles12Atom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideShowSlideInfoAtom (24 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| perSlideHeadersFootersContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| drawing (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideSchemeColorSchemeAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideProgTagsContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgRoundTripMainMaster (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| templateNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_MainMaster](#Section_38fb1fa50a62477a8b14178df22de812). |

**slideAtom (32 bytes):** A [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) record that specifies slide-specific information.

**rgSchemeListElementColorScheme (variable):** An array of [SchemeListElementColorSchemeAtom](#Section_cf7562a6f79f4705a2fb5f5d84bea12d) record that specifies a list of [**color schemes**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5). The array continues while the **rh.recType** field of each SchemeListElementColorSchemeAtom item is equal to RT\_ColorSchemeAtom.

**rgTextMasterStyle (variable):** An array of [TextMasterStyleAtom](#Section_5febad270c484f98b655562b986f5874) record that specifies text formatting for this main master slide. It MUST contain at least one item with **rh.recInstance** equal to 0x000 (title placeholder) and at least one item with **rh.recInstance** equal to 0x001 (body placeholder). If this **MainMasterContainer** record is referenced by the first **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) contained within the **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)), this array MUST also contain at least one item with **rh.recInstance** equal to 0x002 (notes placeholder). The array continues while the **rh.recType** field of each TextMasterStyleAtom item is equal to RT\_TextMasterStyleAtom.

**roundTripOArtTextStyles12Atom (variable):** An optional [RoundTripOArtTextStyles12Atom](#Section_92f10e186be94cc19e22fb24856f80d7) record that specifies round-trip information. It SHOULD[<49>](#Appendix_A_49" \o "Product behavior note 49) be ignored and SHOULD[<50>](#Appendix_A_50" \o "Product behavior note 50) be preserved.

**slideShowSlideInfoAtom (24 bytes):** An optional [SlideShowSlideInfoAtom](#Section_10dc4455c5d8472086468cde8644a040) record that specifies [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) information for this main master slide.

**perSlideHeadersFootersContainer (variable):** An optional [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) record that specifies [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) information for this main master slide. It SHOULD[<51>](#Appendix_A_51" \o "Product behavior note 51) be preserved.

**drawing (variable):** A **DrawingContainer** record (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)) that specifies drawing information for this main master slide.

**slideSchemeColorSchemeAtom (40 bytes):** A [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) record that specifies the color scheme for this main master slide.

**slideNameAtom (variable):** An optional [SlideNameAtom](#Section_3b52355ff13f4a20b967be4b42dc6ac5) record that specifies the name of this main master slide. It SHOULD[<52>](#Appendix_A_52" \o "Product behavior note 52) be preserved.

**slideProgTagsContainer (variable):** An optional [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) record that specifies a list of [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

**rgRoundTripMainMaster (variable):** An array of [RoundTripMainMasterRecord](#Section_2a26ce591c7b4d5c840532847659490e) records that specifies additional data for this main master slide. The array continues while **rh.recType** of the RoundTripMainMasterRecord item is equal to one of the following record types: RT\_RoundTripOriginalMainMasterId12Atom, RT\_RoundTripTheme12Atom, RT\_RoundTripColorMapping12Atom, RT\_RoundTripContentMasterInfo12Atom, RT\_RoundTripOArtTextStyles12Atom, RT\_RoundTripAnimationHashAtom12Atom, RT\_RoundTripAnimationAtom12Atom, or RT\_RoundTripCompositeMasterId12Atom. Each record type MUST NOT appear more than once, except for the RT\_RoundTripContentMasterInfo12Atom record type.

**templateNameAtom (variable):** An optional [TemplateNameAtom](#Section_cebe780b49ee491b81a10f90d3872e03) record that specifies the design name of this main master slide.

### RoundTripMainMasterRecord

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)

A variable type record whose type and meaning is dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_RoundTripOriginalMainMasterId12Atom](#Section_38fb1fa50a62477a8b14178df22de812) | A [RoundTripOriginalMainMasterId12Atom](#Section_4ffb4a9b891a41e689cdfd4312d08c90) record that specifies round-trip information. It SHOULD[<53>](#Appendix_A_53" \o "Product behavior note 53) be ignored and SHOULD[<54>](#Appendix_A_54" \o "Product behavior note 54) be preserved. |
| RT\_RoundTripTheme12Atom | A [RoundTripThemeAtom](#Section_a50e597e248a41c8a1c370fd0988d609) record that specifies round-trip information. It SHOULD[<55>](#Appendix_A_55" \o "Product behavior note 55) be ignored and SHOULD[<56>](#Appendix_A_56" \o "Product behavior note 56) be preserved. |
| RT\_RoundTripColorMapping12Atom | A [RoundTripColorMappingAtom](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) record that specifies round-trip information. It SHOULD[<57>](#Appendix_A_57" \o "Product behavior note 57) be ignored and SHOULD[<58>](#Appendix_A_58" \o "Product behavior note 58) be preserved. |
| RT\_RoundTripContentMasterInfo12Atom | A [RoundTripContentMasterInfo12Atom](#Section_15e1aa8993ac4f248e0e398ecec7897b) record that specifies round-trip information. It SHOULD[<59>](#Appendix_A_59" \o "Product behavior note 59) be ignored and SHOULD[<60>](#Appendix_A_60" \o "Product behavior note 60) be preserved. |
| RT\_RoundTripOArtTextStyles12Atom | A [RoundTripOArtTextStyles12Atom](#Section_92f10e186be94cc19e22fb24856f80d7) record that specifies round-trip information. It SHOULD[<61>](#Appendix_A_61" \o "Product behavior note 61) be ignored and SHOULD[<62>](#Appendix_A_62" \o "Product behavior note 62) be preserved. |
| RT\_RoundTripAnimationHashAtom12Atom | A [RoundTripAnimationHashAtom](#Section_c10e75d664d04e53aa84a06134026ed4) record that specifies round-trip information. It SHOULD[<63>](#Appendix_A_63" \o "Product behavior note 63) be ignored and SHOULD[<64>](#Appendix_A_64" \o "Product behavior note 64) be preserved. |
| RT\_RoundTripAnimationAtom12Atom | A [RoundTripAnimationAtom](#Section_6360395dcf04485a920324d5ae5591ec) record that specifies round-trip information. It SHOULD[<65>](#Appendix_A_65" \o "Product behavior note 65) be ignored and SHOULD[<66>](#Appendix_A_66" \o "Product behavior note 66) be preserved. |
| RT\_RoundTripCompositeMasterId12Atom | A [RoundTripCompositeMasterId12Atom](#Section_ae0701f92b464b6c90a049e7cfb20a7e) record that specifies round-trip information. It SHOULD[<67>](#Appendix_A_67" \o "Product behavior note 67) be ignored and SHOULD[<68>](#Appendix_A_68" \o "Product behavior note 68) be preserved. |

### MasterOrSlideContainer

A variable type record whose type and meaning is dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_Slide](#Section_38fb1fa50a62477a8b14178df22de812) | A **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) that specifies a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). |
| RT\_MainMaster | A **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) that specifies a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). |

### NotesContainer

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) or a [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

Let the *corresponding notes master* be specified by the **NotesContainer** record specified by the **notesMasterPersistIdRef** field of the **DocumentAtom** record (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| drawing (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideSchemeColorSchemeAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideProgTagsContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgNotesRoundTripAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Notes](#Section_38fb1fa50a62477a8b14178df22de812). |

**notesAtom (16 bytes):** A [NotesAtom](#Section_9bb3e3521014477bb286cd43127c3b74) record that specifies data for this notes slide or notes master slide.

**drawing (variable):** A **DrawingContainer** record (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)) that specifies the arrangement of content on this notes slide or notes master slide.

**slideSchemeColorSchemeAtom (40 bytes):** A [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) record that specifies a [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) for this notes slide or notes master slide. If **notesAtom.slideFlags.fMasterScheme** is set, the SlideSchemeColorSchemeAtom record contained by the *corresponding notes master* is used instead.

**slideNameAtom (variable):** An optional [SlideNameAtom](#Section_3b52355ff13f4a20b967be4b42dc6ac5) record that specifies a name for this notes slide or notes master slide. It SHOULD[<69>](#Appendix_A_69" \o "Product behavior note 69) be preserved.

**slideProgTagsContainer (variable):** An optional [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) record that specifies a list of [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

**rgNotesRoundTripAtom (variable):** An array of [NotesRoundTripAtom](#Section_95d576adf038406283f1c8b31e01db00) records that specifies additional data for this notes slide or notes master slide. The array continues while **rh.recType** of the NotesRoundTripAtom item is equal to one of the following record types: RT\_RoundTripTheme12Atom, RT\_RoundTripColorMapping12Atom, or RT\_RoundTripNotesMasterTextStyles12Atom. Each record type MUST NOT appear more than once.

### NotesRoundTripAtom

*Referenced by:* [*NotesContainer*](#Section_50bfc0f7c1014c3287546ca59772b785)

A variable type record whose type and meaning is dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_RoundTripTheme12Atom](#Section_38fb1fa50a62477a8b14178df22de812) | A [RoundTripThemeAtom](#Section_a50e597e248a41c8a1c370fd0988d609) record that specifies round-trip information. It SHOULD[<70>](#Appendix_A_70" \o "Product behavior note 70) be ignored and SHOULD[<71>](#Appendix_A_71" \o "Product behavior note 71) be preserved. |
| RT\_RoundTripColorMapping12Atom | A [RoundTripColorMappingAtom](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) record that specifies round-trip information. It SHOULD[<72>](#Appendix_A_72" \o "Product behavior note 72) be ignored and SHOULD[<73>](#Appendix_A_73" \o "Product behavior note 73) be preserved. |
| RT\_RoundTripNotesMasterTextStyles12Atom | A [RoundTripNotesMasterTextStyles12Atom](#Section_50f47937dbe0403eb93ed170d9b6ea0d) record that specifies round-trip information. It SHOULD[<74>](#Appendix_A_74" \o "Product behavior note 74) be ignored and SHOULD[<75>](#Appendix_A_75" \o "Product behavior note 75) be preserved. |

### HandoutContainer

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| drawing (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideSchemeColorSchemeAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideProgTagsContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgHandoutRoundTripAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Handout](#Section_38fb1fa50a62477a8b14178df22de812). |

**drawing (variable):** A **DrawingContainer** record (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)) that specifies the arrangement of content on the handout master slide.

**slideSchemeColorSchemeAtom (40 bytes):** A [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) record that specifies the [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) for the handout master slide.

**slideNameAtom (variable):** An optional [SlideNameAtom](#Section_3b52355ff13f4a20b967be4b42dc6ac5) record that specifies the name for the handout master slide. It SHOULD[<76>](#Appendix_A_76" \o "Product behavior note 76) be preserved.

**slideProgTagsContainer (variable):** An optional [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) record that specifies a list of [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

**rgHandoutRoundTripAtom (variable):** An array of [HandoutRoundTripAtom](#Section_245d3c1ee2b84468bea0464be6251e09) records that specifies round-trip information. The array continues while **rh.recType** of the HandoutRoundTripAtom item is equal to one of the following record types: RT\_RoundTripTheme12Atom or RT\_RoundTripColorMapping12Atom. Each record type MUST NOT appear more than once.

### HandoutRoundTripAtom

*Referenced by:* [*HandoutContainer*](#Section_bf6d1f839023412089c3fb69e49d0212)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_RoundTripTheme12Atom](#Section_38fb1fa50a62477a8b14178df22de812) | A [RoundTripThemeAtom](#Section_a50e597e248a41c8a1c370fd0988d609) record that specifies round-trip information. It SHOULD[<77>](#Appendix_A_77" \o "Product behavior note 77) be ignored and SHOULD[<78>](#Appendix_A_78" \o "Product behavior note 78) be preserved. |
| RT\_RoundTripColorMapping12Atom | A [RoundTripColorMappingAtom](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) record that specifies round-trip information. It SHOULD[<79>](#Appendix_A_79" \o "Product behavior note 79) be ignored and SHOULD[<80>](#Appendix_A_80" \o "Product behavior note 80) be preserved. |

### SlideAtom

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

Let the *corresponding slide* be specified by the **SlideContainer** record (section 2.5.1) or **MainMasterContainer** record (section 2.5.3) that contains this **SlideAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| geom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgPlaceholderTypes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| masterIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| notesIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideFlags | | | | | | | | | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x2. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000018. |

**geom (4 bytes):** A [**SlideLayoutType**](#Section_df8f3d7bdb6747dc8c8920f5cbbf0fa9) enumeration that specifies a hint to the user interface which [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107) exists on the *corresponding slide*.

A slide layout specifies the type and number of [**placeholder shapes**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) on a slide. A placeholder shape is specified as an **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) that contains a [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) record with a **pos** field not equal to 0xFFFFFFFF. The **placementId** field of the **PlaceholderAtom** record specifies the placeholder shape type. Additional constraints on the type and number of placeholder shapes are specified in the following table.

| Value | Placeholder shapes |
| --- | --- |
| SL\_TitleSlide | The *corresponding slide* MUST be a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) and MUST contain at most one PlaceholderAtom record with a **placementId** equal to [PT\_CenterTitle](#Section_dbfd04be077644d9b408b07f4c951eaf), and at most one PlaceholderAtom record with a **placementId** equal to PT\_SubTitle, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_TitleBody | If the *corresponding slide* is a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) it MUST contain one PlaceholderAtom record with a **placementId** equal to PT\_MasterTitle, one PlaceholderAtom record with a **placementId** equal to PT\_MasterBody, one PlaceholderAtom record with a **placementId** equal to PT\_MasterDate, one PlaceholderAtom record with a **placementId** equal to PT\_MasterFooter, and one PlaceholderAtom record with a **placementId** equal to PT\_MasterSlideNumber, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF.  If the *corresponding slide* is a presentation slide it MUST contain at most one PlaceholderAtom record with **placementId** equal to PT\_Title and at most one PlaceholderAtom record with **placementId** equal to PT\_Body, PT\_Table, PT\_OrgChart, PT\_Graph, PT\_Object or PT\_VerticalBody, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_MasterTitle | The *corresponding slide* MUST be a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e) and MUST contain one PlaceholderAtom record with a **placementId** equal to PT\_MasterCenterTitle, one PlaceholderAtom record with a **placementId** equal to PT\_MasterSubTitle, at most one PlaceholderAtom record with a **placementId** equal to PT\_MasterDate, at most one PlaceholderAtom record with a **placementId** equal to PT\_MasterFooter and at most one PlaceholderAtom record with a **placementId** equal to PT\_MasterSlideNumber, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_TitleOnly | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal 0xFFFFFFFF. |
| SL\_TwoColumns | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, and any combination of zero, one, or two PlaceholderAtom records with **placementId** fields. The following list shows the possible combinations:   * PT\_Body and PT\_Body * PT\_Body and PT\_Graph * PT\_Graph and PT\_Body * PT\_Body and PT\_ClipArt * PT\_ClipArt and PT\_Body * PT\_Body and PT\_Object * PT\_Object and PT\_Body * PT\_Body and PT\_Media * PT\_Media and PT\_Body * PT\_ClipArt and PT\_VerticalBody * PT\_Object and PT\_Object * PT\_Body * PT\_Graph * PT\_ClipArt * PT\_Object * PT\_Media * PT\_VerticalBody   It MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_TwoRows | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most one PlaceholderAtom record with a **placementId** equal to PT\_Body, at most one PlaceholderAtom record with a **placementId** equal to PT\_Object, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_ColumnTwoRows | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most one PlaceholderAtom record with a **placementId** equal to PT\_Body or PT\_Object, at most two additional PlaceholderAtom records with **placementId** fields equal to PT\_Object, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_TwoRowsColumn | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most two PlaceholderAtom records with **placementId** fields equal to PT\_Object, at most one additional PlaceholderAtom record with a **placementId** equal to PT\_Body or PT\_Object, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_TwoColumnsRow | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most two PlaceholderAtom records with **placementId** fields equal to PT\_Object, at most one PlaceholderAtom record with a **placementId** equal to PT\_Body, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_FourObjects | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most four PlaceholderAtom records with **placementId** fields equal to PT\_Object, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_BigObject | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Object, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_Blank | The *corresponding slide* MUST be a presentation slide. There are five layouts supported with this value:  Layout 1: The *corresponding slide* MUST NOT contain any PlaceholderAtom records with a **placementId** unequal to 0xFFFFFFFF.  Layout 2: The *corresponding slide* MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most one PlaceholderAtom record with a **placementId** equal to PT\_Body, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF.  Layout 3: The *corresponding slide* MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most two PlaceholderAtom records with a **placementId** equal to PT\_Body, at most one PlaceholderAtom record with a **placementId** equal to PT\_Object, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF.  Layout 4: The *corresponding slide* MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most one PlaceholderAtom record with a **placementId** equal to PT\_Object, at most one PlaceholderAtom record with a **placementId** equal to PT\_Body, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF.  Layout 5: The *corresponding slide* MUST contain at most one PlaceholderAtom record with a **placementId** equal to PT\_Title, at most one PlaceholderAtom record with a **placementId** equal to PT\_Picture, at most one PlaceholderAtom record with a **placementId** equal to PT\_Body, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_VerticalTitleBody | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with **placementId** equal to PT\_VerticalTitle, at most one PlaceholderAtom record with **placementId** equal to PT\_VerticalBody, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |
| SL\_VerticalTwoRows | The *corresponding slide* MUST be a presentation slide and MUST contain at most one PlaceholderAtom record with **placementId** equal to PT\_VerticalTitle, at most one PlaceholderAtom record with **placementId** equal to PT\_VerticalBody, at most one PlaceholderAtom record with **placementId** equal to PT\_Graph, and MUST NOT contain any other PlaceholderAtom record with a **placementId** unequal to 0xFFFFFFFF. |

**rgPlaceholderTypes (8 bytes):** An array of **PlaceholderEnum** (section 2.13.21) enumeration values that specifies a hint to the user interface which placeholder shapes exist on the *corresponding slide*. The count of items in the array MUST be 8. The sequence of array items MUST be a valid **PlaceholderList** as specified by the ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammars in the following table.

| Value of geom. | Value of rgPlaceholderTypes |
| --- | --- |
| SL\_TitleSlide | 1. PlaceholderList = ( Variant1 / Variant2 )6PT\_None 2. Variant1 = PT\_CenterTitle PT\_SubTitle 3. Variant2 = PT\_Title PT\_Body   The Variant2 rule SHOULD NOT be used. |
| SL\_TitleBody | 1. PlaceholderList = MasterVariant / SlideVariant 2. MasterVariant = PT\_MasterTitle PT\_MasterBody PT\_MasterDate PT\_MasterFooter PT\_MasterSlideNumber 3PT\_None 3. SlideVariant = PT\_Title ( PT\_Body / PT\_Table / PT\_OrgChart / PT\_Graph / PT\_Object / PT\_VerticalBody )6PT\_None |
| SL\_MasterTitle | 1. PlaceholderList = PT\_MasterCenterTitle PT\_MasterSubTitle ( Variant1 / Variant2 ) 2. Variant1 = PT\_MasterDate PT\_MasterFooter PT\_MasterSlideNumber 3PT\_None 3. Variant2 = 6PT\_None   The Variant2 rule SHOULD NOT be used. |
| SL\_TitleOnly | 1. PlaceholderList = PT\_Title 7PT\_None |
| SL\_TwoColumns | 1. PlaceholderList = PT\_Title ( BodyBody / BodyGraph / GraphBody / BodyClipart / ClipartBody / BodyObject / ObjectBody / BodyMedia / MediaBody / ClipartVBody / ObjectObject ) 5PT\_None 2. BodyBody = PT\_Body PT\_Body 3. BodyGraph = PT\_Body PT\_Graph 4. GraphBody = PT\_Graph PT\_Body 5. BodyClipart = PT\_Body PT\_ClipArt 6. ClipartBody = PT\_ClipArt PT\_Body 7. BodyObject = PT\_Body PT\_Object 8. ObjectBody = PT\_Object PT\_Body 9. BodyMedia = PT\_Body PT\_Media 10. MediaBody = PT\_Media PT\_Body 11. ClipartVBody = PT\_ClipArt PT\_VerticalBody 12. ObjectObject = PT\_Object PT\_Object |
| SL\_TwoRows | 1. PlaceholderList = PT\_Title ( BodyObject / ObjectBody ) 5PT\_None 2. BodyObject = PT\_Body PT\_Object 3. ObjectBody = PT\_Object PT\_Body |
| SL\_ColumnTwoRows | 1. PlaceholderList = PT\_Title ( PT\_Body / PT\_Object ) 2PT\_Object 4PT\_None |
| SL\_TwoRowsColumn | 1. PlaceholderList = PT\_Title 2PT\_Object ( PT\_Body / PT\_Object ) 4PT\_None |
| SL\_TwoColumnsRow | 1. PlaceholderList = PT\_Title 2PT\_Object PT\_Body 4PT\_None |
| SL\_FourObjects | 1. PlaceholderList = PT\_Title 4PT\_Object 3PT\_None |
| SL\_BigObject | 1. PlaceholderList = PT\_Object 7PT\_None |
| SL\_Blank | 1. PlaceholderList = AllBlank / BlankVariants 2. AllBlank = 8PT\_None 3. BlankVariants = PT\_Title ( Variant1 / Variant2 / Variant3 / Variant4 ) 3PT\_None 4. Variant1 = PT\_Body 3PT\_None 5. Variant2 = PT\_Body PT\_Object PT\_Body PT\_Object 6. Variant3 = PT\_Object PT\_Body 2PT\_None 7. Variant4 = PT\_Picture PT\_Body 2PT\_None   The **BlankVariants**, **Variant1**, **Variant2**, **Variant3,** and **Variant4** rules SHOULD NOT be used. |
| SL\_VerticalTitleBody | 1. PlaceholderList = PT\_VerticalTitle PT\_VerticalBody 6PT\_None |
| SL\_VerticalTwoRows | 1. PlaceholderList = PT\_VerticalTitle PT\_VerticalBody PT\_Graph 5PT\_None |

**masterIdRef (4 bytes):** A [MasterIdRef](#Section_ac1a16ba424a4f51b11d2914281bdfa5) that specifies the identifier for the main master slide or title master slide that the *corresponding slide* follows. The value 0x00000000 specifies that the *corresponding slide* does not follow a main master slide or a title master slide. It MUST NOT be 0x00000000 if the record that contains this **SlideAtom** record is a **SlideContainer** section. It MUST be 0x00000000 if the record that contains this **SlideAtom** record is a **MainMasterContainer** record.

**notesIdRef (4 bytes):** A [NotesIdRef](#Section_ac43d4cb9e9d4a2cadb44f3da8381d8e) that specifies the identifier for the [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) of the *corresponding slide*. The value 0x00000000 specifies that no notes slide exists. It MUST be 0x00000000 if the record that contains this **SlideAtom** record is a **MainMasterContainer** record.

**slideFlags (2 bytes):** A [SlideFlags](#Section_a840eba8ed0347a0a0c9769236e21a0b) structure that specifies which content the *corresponding slide* follows from its main master slide.

**unused (2 bytes):** Undefined and MUST be ignored.

### SlideFlags

*Referenced by:* [*NotesAtom*](#Section_9bb3e3521014477bb286cd43127c3b74)*,* [*SlideAtom*](#Section_57e11e6ce5504c4380b672731eee8abd)

A structure that specifies information about a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) and its relationship with its [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e); or about a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) and its relationship with its [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

Let the *corresponding slide* be specified by the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)), **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), or **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) that contains this SlideFlags structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | reserved | | | | | | | | | | | | |

**A - fMasterObjects (1 bit):** A bit that specifies whether the *corresponding slide* inherits objects from its main master slide, title master slide, or notes master slide.

**B - fMasterScheme (1 bit):** A bit that specifies whether the *corresponding slide* inherits the [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) from its main master slide, title master slide, or notes master slide.

**C - fMasterBackground (1 bit):** A bit that specifies whether the *corresponding slide* inherits the background from its main master slide, title master slide, or notes master slide.

**reserved (13 bits):** MUST be zero, and MUST be ignored.

### NotesAtom

*Referenced by:* [*NotesContainer*](#Section_50bfc0f7c1014c3287546ca59772b785)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) or [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideFlags | | | | | | | | | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_NotesAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**slideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies the [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) associated with the notes slide. It MUST be 0x00000000 if the **NotesContainer** record (section 2.5.6) that contains this **NotesAtom** record represents the notes master slide. It MUST NOT be 0x00000000 if the **NotesContainer** record that contains this **NotesAtom** record represents a notes slide.

**slideFlags (2 bytes):** A [SlideFlags](#Section_a840eba8ed0347a0a0c9769236e21a0b) structure that specifies which content on the notes slide follows content on the notes master slide. It MUST be 0x0000 if **slideIdRef** is 0x00000000.

**unused (2 bytes):** Undefined and MUST be ignored.

### DrawingContainer

*Referenced by:* [*HandoutContainer*](#Section_bf6d1f839023412089c3fb69e49d0212)*,* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*NotesContainer*](#Section_50bfc0f7c1014c3287546ca59772b785)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies drawing information for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| OfficeArtDg (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_Drawing](#Section_38fb1fa50a62477a8b14178df22de812). |

**OfficeArtDg (variable):** An **OfficeArtDgContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.13) that specifies drawing information for a slide.

### SlideSchemeColorSchemeAtom

*Referenced by:* [*HandoutContainer*](#Section_bf6d1f839023412089c3fb69e49d0212)*,* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*NotesContainer*](#Section_50bfc0f7c1014c3287546ca59772b785)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) used by a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSchemeColor (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be [RT\_ColorSchemeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000020. |

**rgSchemeColor (32 bytes):** An array of [ColorStruct](#Section_473e1e57703f4497a57eea75f0746c1f) structures that specifies a list of colors in the color scheme. The count of items in this array MUST be 8.

### SchemeListElementColorSchemeAtom

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5) in a list of available color schemes.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSchemeColor (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x006. |
| **rh.recType** | MUST be [RT\_ColorSchemeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000020. |

**rgSchemeColor (32 bytes):** An array of [ColorStruct](#Section_473e1e57703f4497a57eea75f0746c1f) structures that specifies a list of colors in the color scheme. The count of items in this array MUST be 8.

### PerSlideHeadersFootersContainer

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about the [**headers**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footers**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) within a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hfAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| userDateAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| footerAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_HeadersFooters](#Section_38fb1fa50a62477a8b14178df22de812). |

**hfAtom (12 bytes):** A [HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082) record that specifies the options for displaying headers and footers.

**userDateAtom (variable):** An optional [UserDateAtom](#Section_59b1690f1aea4b12846f3a1bec342425) record that specifies the custom date to be used in the date field.

**footerAtom (variable):** An optional [FooterAtom](#Section_be36887533e9490db832954eb800a240) record that specifies the text that is used in the footer.

### SlideNameAtom

*Referenced by:* [*HandoutContainer*](#Section_bf6d1f839023412089c3fb69e49d0212)*,* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*NotesContainer*](#Section_50bfc0f7c1014c3287546ca59772b785)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**slideName (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the name of a slide. The length, in bytes, of the field is specified by **rh.recLen**.

### TemplateNameAtom

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) design.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| templateName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 4168. |

**templateName (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the name of a main master slide design. The length, in bytes, of the field is specified by **rh.recLen**.

### SlideProgTagsContainer

*Referenced by:* [*HandoutContainer*](#Section_bf6d1f839023412089c3fb69e49d0212)*,* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*NotesContainer*](#Section_50bfc0f7c1014c3287546ca59772b785)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional slide data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes): rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_ProgTags** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**rgChildRec (variable):** An array of [SlideProgTagsSubContainerOrAtom](#Section_2bc67516d5ab4d9d86761a825c64c2a8) records that specifies additional slide data. The size, in bytes, of the array is specified by **rh.recLen**. The array MUST NOT contain more than one of each of the following records: [PP9SlideBinaryTagExtension](#Section_0ee9570b80ec46f0889aec42dad58baf), [PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17), or [PP12SlideBinaryTagExtension](#Section_1d1704d76e3e472296c70fbe7ca8f682).

### SlideProgTagsSubContainerOrAtom

*Referenced by:* [*SlideProgTagsContainer*](#Section_c2263e42180e4249bd93a421efd8719b)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_ProgStringTag](#Section_38fb1fa50a62477a8b14178df22de812) | A [ProgStringTagContainer](#Section_4c2f2168082c433d8356471fa54af929) record that specifies additional slide data. |
| RT\_ProgBinaryTag | A [SlideProgBinaryTagContainer](#Section_e25eb8d2627e4104b293fc8ed82a098c) record that specifies additional slide data. |

### SlideProgBinaryTagContainer

*Referenced by:* [*SlideProgTagsSubContainerOrAtom*](#Section_2bc67516d5ab4d9d86761a825c64c2a8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional binary slide data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ProgBinaryTag](#Section_38fb1fa50a62477a8b14178df22de812). |

**rec (variable):** A [SlideProgBinaryTagSubContainerOrAtom](#Section_ac9aa6bd3c1549bd81d95b8bfd966053) record that specifies additional slide data.

### SlideProgBinaryTagSubContainerOrAtom

*Referenced by:* [*SlideProgBinaryTagContainer*](#Section_e25eb8d2627e4104b293fc8ed82a098c)

A variable type record whose type and meaning are dictated by the value of **tagNameAtom.tagName** for [UnknownBinaryTag](#Section_4f7ad45eb5844a93b481894f5c671160) or by the value of **tagName** for [PP9SlideBinaryTagExtension](#Section_0ee9570b80ec46f0889aec42dad58baf), [PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17), [PP12SlideBinaryTagExtension](#Section_1d1704d76e3e472296c70fbe7ca8f682), as specified in the following table.

| Value | Meaning |
| --- | --- |
| "\_\_\_PPT9" | A PP9SlideBinaryTagExtension record pair that specifies additional slide data. It MAY[<81>](#Appendix_A_81" \o "Product behavior note 81) be ignored and MUST be preserved. |
| "\_\_\_PPT10" | A PP10SlideBinaryTagExtension record pair that specifies additional slide data. It MAY[<82>](#Appendix_A_82" \o "Product behavior note 82) be ignored and MUST be preserved. |
| "\_\_\_PPT12" | A PP12SlideBinaryTagExtension record pair that specifies additional slide data. It MAY[<83>](#Appendix_A_83" \o "Product behavior note 83) be ignored and MUST be preserved. |
| Any other value | An UnknownBinaryTag record pair that specifies additional slide data. It MUST be ignored and MUST be preserved. |

### PP9SlideBinaryTagExtension

*Referenced by:* [*SlideProgBinaryTagSubContainerOrAtom*](#Section_ac9aa6bd3c1549bd81d95b8bfd966053)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional slide data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (14 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | rhData | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | rgTextMasterStyleAtom (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x0000000E. |

**tagName (14 bytes):** A **PrintableUnicodeString** string (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT9".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**rgTextMasterStyleAtom (variable):** An array of [TextMasterStyle9Atom](#Section_7e0b6a7e059145769dd02305bd8c0323) records that specifies additional character-level and paragraph-level formatting of master slides. The size, in bytes, of the array is specified by **rhData.recLen**.

### PP10SlideBinaryTagExtension

*Referenced by:* [*SlideProgBinaryTagSubContainerOrAtom*](#Section_ac9aa6bd3c1549bd81d95b8bfd966053)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional slide data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTextMasterStyleAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgComment10Container (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| linkedSlideAtom (16 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgLinkedShape10Atom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideFlagsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideTimeAtom (16 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hashCodeAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| extTimeNodeContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildListContainer (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** string (section [2.2.23](#Section_7b3104aabe314358b31039775872b257) ) that specifies the programmable tag name. It MUST be "\_\_\_PPT10".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**rgTextMasterStyleAtom (variable):** An array of [TextMasterStyle10Atom](#Section_72dd8636450c451fa60d9faddcff72be) records that specifies additional character-level and paragraph-level formatting of master slides. The array continues while **rh.recType** of the TextMasterStyle10Atom item is equal to RT\_TextMasterStyle10Atom.

**rgComment10Container (variable):** An array of [Comment10Container](#Section_1a15453d859f48ee8dcd4d51ab9227f8) records that specifies [**presentation comments**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9). The array continues while **rh.recType** of the Comment10Container item is equal to RT\_Comment10.

**linkedSlideAtom (16 bytes):** An optional [LinkedSlide10Atom](#Section_2a277bb42dbe493494c1004b7122ce4d) record that specifies a link to a slide used to display the changes to the slide made by a reviewer. It SHOULD[<84>](#Appendix_A_84" \o "Product behavior note 84) be ignored and SHOULD[<85>](#Appendix_A_85" \o "Product behavior note 85) be omitted.

**rgLinkedShape10Atom (variable):** An optional array of [LinkedShape10Atom](#Section_4ad01f52581d4163b6cebd48fdeba54f) records. The count of items in the array is specified by **linkedSlideAtom.cLinkedShapes**. The array specifies links to shapes used to display the changes of the slide made by a reviewer. It SHOULD[<86>](#Appendix_A_86" \o "Product behavior note 86) be ignored and SHOULD[<87>](#Appendix_A_87" \o "Product behavior note 87) be omitted.

**slideFlagsAtom (12 bytes):** An optional [SlideFlags10Atom](#Section_dcf6722b32014b61b109384b7f80f559) record that specifies slide-level flags.

**slideTimeAtom (16 bytes):** An optional [SlideTime10Atom](#Section_d5e12b9941514c289d8652328381c974) record that specifies the slide creation timestamp.

**hashCodeAtom (12 bytes):** An optional [HashCode10Atom](#Section_bd2afac84f484071ba1a346546e1bee7) record that specifies a hash code for the animations on the slide.

**extTimeNodeContainer (variable):** An optional **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) that specifies slide animation timing data.

**buildListContainer (variable):** An optional [BuildListContainer](#Section_48ffef8e5b8d4711a598cfa1f9fcb252) record that specifies slide animation [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) data.

### Comment10Container

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentAuthorAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentTextAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentAuthorInitialsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentAtom (36 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| rh.recVer | MUST be 0xF. |
| rh.recInstance | MUST be 0x000. |
| rh.recType | MUST be [RT\_Comment10](#Section_38fb1fa50a62477a8b14178df22de812). |

**commentAuthorAtom (variable):** An optional [Comment10AuthorAtom](#Section_e6a12f24381941caa4c6df5065ca75ec) record that specifies the name of the author of the presentation comment.

**commentTextAtom (variable):** An optional [Comment10TextAtom](#Section_509e23de68384693b586dace9899c2c8) record that specifies the text of the presentation comment.

**commentAuthorInitialsAtom (variable):** An optional [Comment10AuthorInitialAtom](#Section_e4516e96f95c43589e69c7e58ef19061) record that specifies the initials of the author of the presentation comment.

**commentAtom (36 bytes):** A [Comment10Atom](#Section_75f276597c4b4bf3ad31d5e221c24494) record that specifies the settings for displaying the presentation comment.

### Comment10AuthorAtom

*Referenced by:* [*Comment10Container*](#Section_1a15453d859f48ee8dcd4d51ab9227f8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of the author of the [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9). The presentation comment is specified by the Comment10Container record that contains this **Comment10AuthorAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentAuthor (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 104. |

**commentAuthor (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of the author. The length, in bytes, of the field is specified by **rh.recLen**.

### Comment10TextAtom

*Referenced by:* [*Comment10Container*](#Section_1a15453d859f48ee8dcd4d51ab9227f8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the text of the [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9). The presentation comment is specified by the Comment10Container record that contains this **Comment10TextAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentText (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 64000. |

**commentText (variable):** A [TabCrLfPrintableUnicodeString](#Section_1a867a3571714f09b56760dea80412f2) that specifies the text for the presentation comment. The length, in bytes, of the field is specified by **rh.recLen**.

### Comment10AuthorInitialAtom

*Referenced by:* [*Comment10Container*](#Section_1a15453d859f48ee8dcd4d51ab9227f8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the initials of the author of the [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9). The presentation comment is specified by the Comment10Container record that contains this **Comment10AuthorInitialAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commentAuthorInitials (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be less than or equal to 104. |

**commentAuthorInitials (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the initials of the author of the presentation comment. The length, in bytes, of the field is specified by **rh.recLen**.

### Comment10Atom

*Referenced by:* [*Comment10Container*](#Section_1a15453d859f48ee8dcd4d51ab9227f8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the settings for displaying a [**presentation comment**](#gt_19005489-a696-4185-a4d6-16afbcdcc0e9). The presentation comment is specified by the Comment10Container record that contains this **Comment10Atom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| index | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| datetime (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| anchor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_Comment10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x0000001C. |

**index (4 bytes):** A signed integer that specifies the index of the presentation comment. The index is part of the presentation comment label. It MUST be greater than or equal to zero.

**datetime (16 bytes):** A [DateTimeStruct](#Section_2da0b9bf164f403dbf1bf8b83b2af166) structure that specifies the creation time of the presentation comment.

**anchor (8 bytes):** A **PointStruct** structure (section [2.12.5](#Section_5faffdc98cdf4bd0a2289a122d01b3f2)) that specifies the location of the presentation comment label in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb), relative to the top-left corner of the [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

### SlideFlags10Atom

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies slide-level flags.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | unused | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_SlideFlags10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**A - fPreserveMaster (1 bit):** A bit that specifies whether to preserve the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e) when there is no slide that follows it. It MUST be ignored if the slide is not a main master slide or title master slide.

**B - fOverrideMasterAnimation (1 bit):** A bit that specifies whether the slide does not follow the animations on the main master slide or title master slide.

**unused (30 bits):** Undefined and MUST be ignored.

### SlideTime10Atom

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the slide creation time stamp.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fileTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):**  A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideTime10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**fileTime (8 bytes):** A **FILETIME** structure, as specified in [[MS-DTYP]](%5bMS-DTYP%5d.pdf#Section_cca2742956894a16b2b49325d93e4ba2) section [2.3.3](http://msdn.microsoft.com/en-us/library/2c57429b-fdd4-488f-b5fc-9e4cf020fcdf/), that specifies the time of slide creation.

### LinkedSlide10Atom

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) and a count of [LinkedShape10Atom](#Section_4ad01f52581d4163b6cebd48fdeba54f) records.

Let the *corresponding main document* be specified by the document that contains both the *corresponding linked document* and the *corresponding reviewer document*.

Let the *corresponding linked document* be specified as follows:

* Let the *corresponding main master slide* be specified by the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) that is specified by the first **MasterPersistAtom** record (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) in the **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)) in the *corresponding main document*.
* Let the *corresponding shape* be specified by the **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14)such thatthe **wzName\_complex** property ([MS-ODRAW] section 2.3.4.2) matches the string "Linked". The *corresponding shape* is contained by the **drawing** field of the *corresponding main master slide*.
* Let the *corresponding OLE object* be specified by the **ExOleEmbedContainer** record (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229) ) whose **exOleObjAtom.exObjId** field matches the **exObjIdRef** field of the [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f)record that is contained within the *corresponding shape*. Let the *corresponding linked document* be the *corresponding OLE object* so specified.

Let the *corresponding reviewer document* be specified as follows:

* Let the *corresponding main master slide* be specified by the **MainMasterContainer** record that is specified by the first **MasterPersistAtom** record (section 2.4.14.2) in the **MasterListWithTextContainer** record (section 2.4.14.1) in the *corresponding main document*.
* Let the *corresponding shape* be specified by the **OfficeArtSpContainer** record ([MS-ODRAW] section 2.2.14)such thatthe **wzName\_complex** property ([MS-ODRAW] section 2.3.4.2) matches the string "Reviewer". The *corresponding shape* is contained by the **drawing** field of the *corresponding main master slide*.
* Let the *corresponding OLE object* be specified by the **ExOleEmbedContainer** record whose **exOleObjAtom.exObjId** field matches the **exObjIdRef** field of the ExObjRefAtomrecord that is contained within the *corresponding shape*. Let the *corresponding reviewer document* be the *corresponding OLE object* so specified.

Let the *corresponding base document* be specified as follows:

* Let the *corresponding main master slide* be specified by the **MainMasterContainer** record that is specified by the first **MasterPersistAtom** record (section 2.4.14.2) in the **MasterListWithTextContainer** record (section 2.4.14.1) in the *corresponding reviewer document*.
* Let the *corresponding shape* be specified by the **OfficeArtSpContainer** record ([MS-ODRAW] section 2.2.14)such thatthe **wzName\_complex** property ([MS-ODRAW] section 2.3.4.2) matches the string "Base". The *corresponding shape* is contained by the **drawing** field of the *corresponding main master slide*.
* Let the *corresponding OLE object* be specified by the **ExOleEmbedContainer** record whose **exOleObjAtom.exObjId** field matches the **exObjIdRef** field of the ExObjRefAtomrecord that is contained within the *corresponding shape*. Let the *corresponding base document* be the *corresponding OLE object* so specified.

If this **LinkedSlide10Atom** record is contained within the *corresponding main document*, let the *associated document* be specified by the *corresponding linked document*; or if this **LinkedSlide10Atom** record is contained within the *corresponding reviewer document*, let the *associated document* be specified by the *corresponding main document*; or if this **LinkedSlide10Atom** record is contained within the *corresponding base document*, let the associateddocument be specified by the *corresponding linked document*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| linkedSlideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cLinkedShapes | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_LinkedSlide10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**linkedSlideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies a reference to a presentation slide in the *associated document*.

**cLinkedShapes (4 bytes):** A **signed integer** that specifies the count of LinkedShape10Atom records in the **rgLinkedShape10Atom** field of the PP10SlideBinaryTagExtension record that contains this **LinkedSlide10Atom** record.

### LinkedShape10Atom

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) in a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) that contains this **LinkedShape10Atom** record and its *associated shape* from the *associated presentation slide* that is contained within the *associated document*.

Let the *corresponding slide* be specified by the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) that contains this **LinkedShape10Atom** record.

Let the *associated document* be as specified by the [LinkedSlide10Atom](#Section_2a277bb42dbe493494c1004b7122ce4d) record contained within the PP10SlideBinaryTagExtension record pair that contains this **LinkedShape10Atom** record.

Let the *associated presentation slide* contained within the *associated document* be specified by the **linkedSlideIdRef** field of the LinkedSlide10Atom record in the PP10SlideBinaryTagExtension record pair that contains this **LinkedShape10Atom** record.

Let the *associated shape* contained within the *associated presentation slide* be specified by the **linkedShapeIdRef** field of this **LinkedShape10Atom**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| linkedShapeIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_LinkedShape10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**shapeIdRef (4 bytes):** An **unsigned integer** that specifies a reference to the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) contained within the *corresponding slide* such that the **shapeProp.spid** field matches the value of this field.

**linkedShapeIdRef (4 bytes):**  An **unsigned integer** that specifies a reference to the **OfficeArtSpContainer** ([MS-ODRAW] section 2.2.14) contained within the *associated presentation slide* such that the **shapeProp.spid** field matches the value of this field.

### PP12SlideBinaryTagExtension

*Referenced by:* [*SlideProgBinaryTagSubContainerOrAtom*](#Section_ac9aa6bd3c1549bd81d95b8bfd966053)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional slide data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| roundTripHeaderFooterDefaultsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** string (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT12".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**roundTripHeaderFooterDefaultsAtom (9 bytes):** An optional [RoundTripHeaderFooterDefaults12Atom](#Section_016741fdd7aa4958b577c81fe19c179b) record that specifies [**headers**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footers**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) data for a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d), [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e), [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577), or [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

## Slide Show Types

### SlideShowDocInfoAtom

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies how a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) is displayed.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| penColor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| restartTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| startSlide | | | | | | | | | | | | | | | | endSlide | | | | | | | | | | | | | | | |
| namedShow (64 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | I | reserved | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideShowDocInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000050. |

**penColor (4 bytes):**  A [ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) structure that specifies a color used to annotate [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) during a slide show.

**restartTime (4 bytes):**  A **signed integer** that specifies an amount of time, in milliseconds, to wait during a period of inactivity before restarting a slide show in [**kiosk mode**](#gt_99a83b73-9232-4aba-8bbd-90ddca45c72a).

**startSlide (2 bytes):**  A **signed integer** that specifies the one-based index of the slide with which the slide show starts. It MUST be greater than or equal to 0x0000. If **fUseSlideRange** is **TRUE**, it MUST NOT be set to 0x0000.

**endSlide (2 bytes):** A **signed integer** that specifies the one-based index of the slide with which the slide show ends. It MUST be greater than or equal to 0x0000. If **fUseSlideRange** is **TRUE**, it MUST NOT be set to 0x0000.

**namedShow (64 bytes):** A [char2](#Section_2bd860f7f6144ed0a0ad5520e82856b7) that specifies the name of a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510) to use when running the slide show.

**A - fAutoAdvance (1 bit):** A bit that specifies whether to automatically advance to the next slide during a slide show based on timing information on the slide.

**B - fWillSkipBuilds (1 bit):** A bit that specifies whether to display animations during a slide show.

**C - fUseSlideRange (1 bit):** A bit that specifies whether to display only the slide range specified by the **startSlide** and **endSlide** fields during a slide show.

**D - fDocUseNamedShow (1 bit):** A bit that specifies whether the slides shown during a slide show are from the named show identified by **namedShow**. It MUST be ignored if **fUseSlideRange** is **TRUE**.

**E - fBrowseMode (1 bit):** A bit that specifies whether the slide show is presented in a way optimized for browsing. If **fBrowseMode** is **TRUE**, **fKioskMode** MUST be **FALSE**.

**F - fKioskMode (1 bit):** A bit that specifies whether the slide show is presented in a way optimized to run at a kiosk. If **fKioskMode** is **TRUE**, **fBrowseMode** MUST be **FALSE**.

**G - fWillSkipNarration (1 bit):** A bit that specifies whether to play slide audio narrations during a slide show.

**H - fLoopContinuously (1 bit):** A bit that specifies whether to restart the slide show at the beginning after advancing from the last slide.

**I - fHideScrollBar (1 bit):** A bit that specifies whether to display the navigational scroll bar during a slide show.

**reserved (7 bits):** MUST be zero and MUST be ignored.

**unused (2 bytes):** Undefined and MUST be ignored.

### NamedShowsContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the [**named shows**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgNamedShow (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_NamedShows](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgNamedShow (variable):** An array of [NamedShowContainer](#Section_a397a8a306f54fe780ea10ead0e1aeb0) records that specifies the named shows.

### NamedShowContainer

*Referenced by:* [*NamedShowsContainer*](#Section_a3d04187565b423f90c637d219781b0c)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShowNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShowSlidesAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_NamedShow](#Section_38fb1fa50a62477a8b14178df22de812). |

**namedShowNameAtom (variable):** A [NamedShowNameAtom](#Section_41443c4148f440d58ec7e9306d25545c) record that specifies the name of this named show.

**namedShowSlidesAtom (variable):** An optional [NamedShowSlidesAtom](#Section_b90394d690dd4557900ec250d1bfc4f9) record that specifies the slides in this named show.

### NamedShowNameAtom

*Referenced by:* [*NamedShowContainer*](#Section_a397a8a306f54fe780ea10ead0e1aeb0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| namedShowName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**namedShowName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of a named show that can be used when running the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

### NamedShowSlidesAtom

*Referenced by:* [*NamedShowContainer*](#Section_a397a8a306f54fe780ea10ead0e1aeb0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the slide identifiers of [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) in a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSlideIdRef (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_NamedShowSlidesAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgSlideIdRef (variable):** An array of **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies the slides that are in this named show. The order of the slides in this array is also the order for the slides in the named show. Any slides referenced here that do not exist in the presentation itself MUST be ignored.

### SlideShowSlideInfoAtom

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies what transition effect to perform during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b), and how to advance to the next [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

Let the *corresponding slide* be specified by the **SlideContainer** record (section 2.5.1) that contains this **SlideShowSlideInfoAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| effectDirection | | | | | | | | effectType | | | | | | | | A | B | C | D | E | F | G | H | I | J | K | L | M | N | | |
| speed | | | | | | | | unused | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_SlideShowSlideInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000010. |

**slideTime (4 bytes):** A signed integer that specifies an amount of time, in milliseconds, to wait before advancing to the next presentation slide. It MUST be greater than or equal to 0 and less than or equal to 86399000. It MUST be ignored unless **fAutoAdvance** is **TRUE**.

**soundIdRef (4 bytes):** A [SoundIdRef](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) that specifies which sound to play when the transition starts.

**effectDirection (1 byte):** A byte that specifies the variant of **effectType**. See the **effectType** field for further restriction and specification of this field.

**effectType (1 byte):** A byte that specifies which transition is used when transitioning to the next presentation slide during a slide show. Any of the following samples are for sample purposes only. Exact rendering of any transition is determined by the rendering application. As such, the same transition can have many variations depending on the implementation.

| Value | Meaning |
| --- | --- |
| 0 | Cut  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: The transition is not made through black. (The effect is the same as no transition at all.) * 0x01: The transition is made through black.   Sample of through black:  transition to black from left to right |
| 1 | Random  **effectDirection** MUST be ignored. |
| 2 | Blinds  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Vertical * 0x01: Horizontal |
| 3 | Checker  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Horizontal * 0x01: Vertical   Sample of Horizontal:  checker transition |
| 4 | Cover  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Left * 0x01: Up * 0x02: Right * 0x03: Down * 0x04: Left Up * 0x05: Right Up * 0x06: Left Down * 0x07: Right Down   Sample of Down:  cover transition |
| 5 | Dissolve  dissolve transition  **effectDirection** MUST be 0x00. |
| 6 | Fade  fade transition  **effectDirection** MUST be 0x00. |
| 7 | Uncover  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Left * 0x01: Up * 0x02: Right * 0x03: Down * 0x04: Left Up * 0x05: Right Up * 0x06: Left Down * 0x07: Right Down   Sample of Down:  down transition |
| 8 | Random Bars  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Horizontal * 0x01: Vertical   Sample of Horizontal:  random bars transition |
| 9 | Strips  The following specifies the possible **effectDirection** values and their meanings:   * 0x04: Left Up * 0x05: Right Up * 0x06: Left Down * 0x07: Right Down   Sample of Left Down:  stripe transition |
| 10 | Wipe  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Left * 0x01: Up * 0x02: Right * 0x03: Down   Sample of Left:  wipe transition |
| 11 | Box In/Out  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Out * 0x01: In   Sample of In:  Box in or out transition |
| 13 | Split  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Horizontally out * 0x01: Horizontally in * 0x02: Vertically out * 0x03: Vertically in   Sample of Horizontally In:  split transition |
| 17 | Diamond  diamond transition  **effectDirection** MUST be 0x00. |
| 18 | Plus  plus transition  **effectDirection** MUST be 0x00. |
| 19 | Wedge  wedge transition  **effectDirection** MUST be 0x00. |
| 20 | Push  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Left * 0x01: Up * 0x02: Right * 0x03: Down   Sample of Down:  push transition |
| 21 | Comb  The following specifies the possible **effectDirection** values and their meanings:   * 0x00: Horizontal * 0x01: Vertical   Sample of Horizontal:  comb transition |
| 22 | Newsflash  newsflash transition  **effectDirection** MUST be 0x00. |
| 23 | AlphaFade  alphafade transition  **effectDirection** MUST be 0x00. |
| 26 | Wheel  Sample of 3:  wheel transition  **effectDirection** values refer to the number of radial divisions used in the effect. The value MUST be one of 0x01, 0x02, 0x03, 0x04, or 0x08. |
| 27 | Circle  circle transition  **effectDirection** MUST be 0x00. |
| 255 | Undefined and MUST be ignored. |

**A - fManualAdvance (1 bit):** A bit that specifies whether the presentation slide can be manually advanced by the user during the slide show.

**B - reserved1 (1 bit):** MUST be zero and MUST be ignored.

**C - fHidden (1 bit):** A bit that specifies whether the *corresponding slide* is hidden and is not displayed during the slide show.

**D - reserved2 (1 bit):** MUST be zero and MUST be ignored.

**E - fSound (1 bit):** A bit that specifies whether to play the sound specified by **soundIdRef**.

**F - reserved3 (1 bit):** MUST be zero and MUST be ignored.

**G - fLoopSound (1 bit):** A bit that specifies whether the sound specified by **soundIdRef** is looped continuously when playing until the next sound plays.

**H - reserved4 (1 bit):** MUST be zero and MUST be ignored.

**I - fStopSound (1 bit):** A bit that specifies whether to stop any currently playing sound when the transition starts.

**J - reserved5 (1 bit):** MUST be zero and MUST be ignored.

**K - fAutoAdvance (1 bit):** A bit that specifies whether the slide will automatically advance after **slideTime** milliseconds during the slide show.

**L - reserved6 (1 bit):** MUST be zero and MUST be ignored.

**M - fCursorVisible (1 bit):** A bit that specifies whether to display the cursor during the slide show.

**N - reserved7 (3 bits):** MUST be zero and MUST be ignored.

**speed (1 byte):** A byte value that specifies how long the transition takes to run.

| Value | Meaning |
| --- | --- |
| 0x00 | 0.75 seconds |
| 0x01 | 0.5 seconds |
| 0x02 | 0.25 seconds |

**unused (3 bytes):** Undefined and MUST be ignored.

### InteractiveInfoInstance

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

A variable type record whose type and meaning are dictated by the value of **rh.recInstance** as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x000 | A [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) record that specifies actions to perform when the mouse is clicked on an object. |
| 0x001 | A [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) record that specifies actions to perform when the mouse is moved over an object. |

### MouseClickInteractiveInfoContainer

*Referenced by:* [*InteractiveInfoInstance*](#Section_9225f32d5eb146b38ebd442bffded30d)*,* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies what actions to perform when interacting with an object by means of a mouse click.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| interactiveInfoAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| macroNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_InteractiveInfo](#Section_38fb1fa50a62477a8b14178df22de812). |

**interactiveInfoAtom (24 bytes):** An [InteractiveInfoAtom](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7) record that specifies the type of action to be performed.

**macroNameAtom (variable):** An optional [MacroNameAtom](#Section_7f850503c5444c8798172f1368632b70) record that specifies the name of a [**macro**](#gt_cd2933d3-08d1-4931-bd5c-7ae0a668fe7c), a file name, or a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510). It MUST be ignored unless **interactiveInfoAtom.action** is equal to "II\_MacroAction", "II\_RunProgramAction", or "II\_CustomShowAction".

### MouseOverInteractiveInfoContainer

*Referenced by:* [*InteractiveInfoInstance*](#Section_9225f32d5eb146b38ebd442bffded30d)*,* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies what actions to perform when interacting with an object by moving the mouse cursor over it.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| interactiveInfoAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| macroNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be [RT\_InteractiveInfo](#Section_38fb1fa50a62477a8b14178df22de812). |

**interactiveInfoAtom (24 bytes):** An [InteractiveInfoAtom](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7) record that specifies the type of action to be performed.

**macroNameAtom (variable):** An optional [MacroNameAtom](#Section_7f850503c5444c8798172f1368632b70) record that specifies the name of a [**macro**](#gt_cd2933d3-08d1-4931-bd5c-7ae0a668fe7c), a file name, or a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510). It MUST be ignored unless **interactiveInfoAtom.action** is equal to "II\_MacroAction", "II\_RunProgramAction", or "II\_CustomShowAction".

### InteractiveInfoAtom

*Referenced by:* [*MouseClickInteractiveInfoContainer*](#Section_cc0910dd1aae4da9afa958a386333bcb)*,* [*MouseOverInteractiveInfoContainer*](#Section_8714c89a4bb34fa581650742725cf755)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a type of action to be performed.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exHyperlinkIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| action | | | | | | | | oleVerb | | | | | | | | jump | | | | | | | | A | B | C | D | E | | | |
| hyperlinkType | | | | | | | | unused | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_InteractiveInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000010. |

**soundIdRef (4 bytes):** A [SoundIdRef](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) that specifies the sound to play when this action executes.

**exHyperlinkIdRef (4 bytes):** An [ExHyperlinkIdRef](#Section_c2068363765343ecb8bb746532d66c6e) that specifies the hyperlink to follow when this action executes. It MUST be ignored unless **action** is equal to "II\_JumpAction", "II\_HyperlinkAction", or "II\_CustomShowAction".

**action (1 byte):** An [**InteractiveInfoActionEnum**](#Section_61cd7fe2e7d440929d4c3c5b720e8330) enumeration that specifies the action to perform when this action executes.

**oleVerb (1 byte):** An [**OLEVerbEnum**](#Section_d3f3afeef16e41e7b03832a789f2e85b) enumeration that specifies the OLE verb to run when this action executes. It MUST be ignored unless **action** is equal to "II\_OLEAction".

**jump (1 byte):** An [**InteractiveInfoJumpEnum**](#Section_9466e4a7a80d42d4b6844f31463142b1) enumeration that specifies the slide to jump to. It MUST be ignored unless **action** is equal to "II\_JumpAction".

**A - fAnimated (1 bit):** A bit that specifies whether to animate the object this action applies to when the action is performed.

**B - fStopSound (1 bit):** A bit that specifies whether to stop currently playing sounds. It MUST be ignored if the **soundIdRef** field specifies a sound to play.

**C - fCustomShowReturn (1 bit):** A bit that specifies to return to the previous set of displayed slides at the end of the [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510). It MUST be ignored unless **action** is equal to II\_CustomShowAction.

**D - fVisited (1 bit):** A bit that specifies whether this action was executed since the file was last loaded.

**E - reserved (4 bits):** MUST be zero and MUST be ignored.

**hyperlinkType (1 byte):** A [**LinkToEnum**](#Section_2f58ed281a7f43ceade7c2b04c74e522) enumeration that specifies how to interpret the hyperlink referred to by **exHyperlinkIdRef**.

**unused (3 bytes):** Undefined and MUST be ignored.

### MacroNameAtom

*Referenced by:* [*MouseClickInteractiveInfoContainer*](#Section_cc0910dd1aae4da9afa958a386333bcb)*,* [*MouseOverInteractiveInfoContainer*](#Section_8714c89a4bb34fa581650742725cf755)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the name of a [**macro**](#gt_cd2933d3-08d1-4931-bd5c-7ae0a668fe7c), a file name, or a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| macroName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**macroName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of a macro, a file name, or a named show. If this field specifies a macro and it is not the same as a subroutine present in the [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e), it MUST be ignored. The length, in bytes, of the field is specified by **rh.recLen**.

## Shape Types

### OfficeArtClientAnchor

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the location of a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clientAnchorData (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** An **OfficeArtRecordHeader** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.1) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be 0xF010. |
| **rh.recLen** | MUST be 0x00000008 or 0x00000010. |

**clientAnchorData (variable):** An [OfficeArtClientAnchorData](#Section_beecde28e2394d88b92c6e9dcf031e39) structure that specifies the location.

### OfficeArtClientAnchorData

*Referenced by:* [*OfficeArtClientAnchor*](#Section_37ee18c73c7c4adc91fbcb3b01789d72)

A variable type structure whose type and meaning are dictated by the value of **rh.recLen** of the OfficeArtClientAnchor record that contains this **OfficeArtClientAnchorData** structure, as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x00000008 | A [SmallRectStruct](#Section_e47cb9738480499590b2008bcb2ffc65) structure that specifies the location of the shape. |
| 0x00000010 | A [RectStruct](#Section_8a58e3ae268242d082cda41c2999584e) structure that specifies the location of the shape. |

### OfficeArtClientData

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeFlagsAtom (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | shapeFlags10Atom (optional) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | exObjRefAtom (optional) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | animationInfo (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mouseClickInteractiveInfo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mouseOverInteractiveInfo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| placeholderAtom (16 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| recolorInfoAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgShapeClientRoundtripData (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** An **OfficeArtRecordHeader** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.1) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be 0xF011. |

**shapeFlagsAtom (9 bytes):** An optional [ShapeFlagsAtom](#Section_87961734a0f44ba6b4d7cb28d7d6ee78) record that specifies flags for the shape.

**shapeFlags10Atom (9 bytes):** An optional [ShapeFlags10Atom](#Section_8eb485b34df1413cbb3264ce5064054d) record that specifies flags for the shape.

**exObjRefAtom (12 bytes):** An optional [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f) record that specifies a reference to an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d).

**animationInfo (variable):** An optional [AnimationInfoContainer](#Section_a35de8fea76b43fc8e53ebcff8843705) record that specifies animation information for the shape.

**mouseClickInteractiveInfo (variable):** An optional [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) record that specifies information about interacting with the shape by clicking the mouse on the shape.

**mouseOverInteractiveInfo (variable):** An optional [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) record that specifies information about interacting with the shape by moving the mouse over the shape.

**placeholderAtom (16 bytes):** An optional [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) record that specifies whether the shape is a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2).

**recolorInfoAtom (variable):** An optional [RecolorInfoAtom](#Section_01ac11fb62734b36932d39b861eb144c) record that specifies a collection of re-color mappings for the shape.

**rgShapeClientRoundtripData (variable):** An array of [ShapeClientRoundtripDataSubContainerOrAtom](#Section_92bce4f0921c4b5b92d37ade03646250) records that specifies additional information about a shape. The array continues while **rh.recType** of the ShapeClientRoundtripDataSubContainerOrAtom item is equal to one of the following record types: [RT\_ProgTags](#Section_38fb1fa50a62477a8b14178df22de812), RT\_RoundTripNewPlaceholderId12Atom, RT\_RoundTripShapeId12Atom, RT\_RoundTripHFPlaceholder12Atom, or RT\_RoundTripShapeCheckSumForCL12Atom. Each record type MUST NOT appear more than once.

### ShapeClientRoundtripDataSubContainerOrAtom

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified by the following table.

| Value | Meaning |
| --- | --- |
| **RT\_ProgTags** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)) | A [ShapeProgTagsContainer](#Section_f8ad5874193e43f08400246b29b606bf) record that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) for the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e). |
| RT\_RoundTripNewPlaceholderId12Atom | A [RoundTripNewPlaceholderId12Atom](#Section_c13cfcfdd6964aecb1f2eafb3bd3977b) record that specifies a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) identifier. It SHOULD[<88>](#Appendix_A_88" \o "Product behavior note 88) be ignored and SHOULD[<89>](#Appendix_A_89" \o "Product behavior note 89) be preserved. |
| RT\_RoundTripShapeId12Atom | A [RoundTripShapeId12Atom](#Section_a3e1963983784a1582db7453be42ddbe) record that specifies a shape identifier. It SHOULD[<90>](#Appendix_A_90" \o "Product behavior note 90) be ignored and SHOULD[<91>](#Appendix_A_91" \o "Product behavior note 91) be preserved. |
| RT\_RoundTripHFPlaceholder12Atom | A [RoundTripHFPlaceholder12Atom](#Section_ec3baf39684b49d38850d5798f0a1915) record that specifies whether a shape is a [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) or [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) placeholder shape. It SHOULD[<92>](#Appendix_A_92" \o "Product behavior note 92) be ignored and SHOULD[<93>](#Appendix_A_93" \o "Product behavior note 93) be preserved. |
| RT\_RoundTripShapeCheckSumForCL12Atom | A [RoundTripShapeCheckSumForCustomLayouts12Atom](#Section_45644f02790a4d0c998e59ab5500c909) record that specifies checksum values for a shape**.** It SHOULD[<94>](#Appendix_A_94" \o "Product behavior note 94) be ignored and SHOULD[<95>](#Appendix_A_95" \o "Product behavior note 95) be preserved. |

### ShapeFlagsAtom

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies shape-level **Boolean** flags. More flags are specified in the [ShapeFlags10Atom](#Section_8eb485b34df1413cbb3264ce5064054d) record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | reserved | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ShapeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**A - fAlwaysOnTop (1 bit):** A bit that specifies whether a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) is rendered on top of other shapes.

**reserved (7 bits):**  MUST be zero and MUST be ignored.

### ShapeFlags10Atom

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies shape-level **Boolean** flags. More flags are specified in the [ShapeFlagsAtom](#Section_87961734a0f44ba6b4d7cb28d7d6ee78) record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | reserved2 | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ShapeFlags10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**A - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**B - fIsPhotoAlbumPicture (1 bit):** A bit that specifies whether a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) is a picture in a photo album specified by the [PhotoAlbumInfo10Atom](#Section_2782f287ec64433182bc63fb6eb8c98e) record. It MAY[<96>](#Appendix_A_96" \o "Product behavior note 96) be ignored.

**reserved2 (5 bits):**  MUST be zero and MUST be ignored.

### ExObjRefAtom

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exObjIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ExternalObjectRefAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**exObjIdRef (4 bytes):** An [ExObjIdRef](#Section_019cfee017eb4946ac81d88c6d170c0b) that specifies an identifier that references an external object.

### PlaceholderAtom

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies whether a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) is a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2). The number, position, and type of placeholder shapes are determined by the [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107) as specified in the [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) record.

Let the *corresponding shape* be specified by the **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) that contains this **PlaceholderAtom** record.

Let the *corresponding slide* be specified by the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), **HandoutContainer** record (section [2.5.8](#Section_bf6d1f839023412089c3fb69e49d0212)), **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)), or **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) that contains this **PlaceholderAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| placementId | | | | | | | | size | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_PlaceholderAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**position (4 bytes):** A **signed integer** that specifies an identifier for the placeholder shape. It SHOULD be unique among all **PlaceholderAtom** records contained in the *corresponding slide*. The value 0xFFFFFFFF specifies that the *corresponding shape* is not a placeholder shape.

**placementId (1 byte):** A [**PlaceholderEnum**](#Section_dbfd04be077644d9b408b07f4c951eaf) enumeration that specifies the type of the placeholder shape. The value MUST conform to the constraints as specified in the following table.

| Value | Meaning |
| --- | --- |
| PT\_None | MUST NOT be used for this field. |
| PT\_MasterTitle | The *corresponding shape* contains the master title text. The *corresponding slide* MUST be a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). |
| PT\_MasterBody | The *corresponding shape* contains the master body text. The *corresponding slide* MUST be a main master slide. |
| PT\_MasterCenterTitle | The *corresponding shape* contains the master center title text. The *corresponding slide* MUST be a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). |
| PT\_MasterSubTitle | The *corresponding shape* contains the master sub-title text. The *corresponding slide* MUST be a title master slide. |
| PT\_MasterNotesSlideImage | The *corresponding shape* contains the shared properties for slide image shapes. The *corresponding slide* MUST be a [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a). |
| PT\_MasterNotesBody | The *corresponding shape* contains the master body text. The *corresponding slide* MUST be a notes master slide. |
| PT\_MasterDate | The *corresponding shape* contains the date text field. The *corresponding slide* MUST be a main master slide, title master slide, notes master slide, or [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577). |
| PT\_MasterSlideNumber | The *corresponding shape* contains a slide number text field. The *corresponding slide* MUST be a main master slide, title master slide, notes master slide, or handout master slide. |
| PT\_MasterFooter | The *corresponding shape* contains a [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) text field. The *corresponding slide* MUST be a main master slide, title master slide, notes master slide, or handout master slide. |
| PT\_MasterHeader | The *corresponding shape* contains a [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) text field. The *corresponding slide* MUST be a notes master slide or handout master slide. |
| PT\_NotesSlideImage | The *corresponding shape* contains a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) image. The *corresponding slide* MUST be a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65). |
| PT\_NotesBody | The *corresponding shape* contains the notes text. The *corresponding slide* MUST be a notes slide. |
| PT\_Title | The *corresponding shape* contains the title text. The *corresponding slide* MUST be a presentation slide. |
| PT\_Body | The *corresponding shape* contains the body text. The *corresponding slide* MUST be a presentation slide. |
| PT\_CenterTitle | The *corresponding shape* contains the center title text. The *corresponding slide* MUST be a presentation slide. |
| PT\_SubTitle | The *corresponding shape* contains the sub-title text. The *corresponding slide* MUST be a presentation slide. |
| PT\_VerticalTitle | The *corresponding shape* contains the title text with vertical text flow. The correspondingslide MUST be a presentation slide. |
| PT\_VerticalBody | The *corresponding shape* contains the body text with vertical text flow. The correspondingslide MUST be a presentation slide. |
| PT\_Object | The *corresponding shape* contains a generic object. The *corresponding slide* MUST be a presentation slide. |
| PT\_Graph | The *corresponding shape* contains a chart object. The *corresponding slide* MUST be a presentation slide. |
| PT\_Table | The *corresponding shape* contains a table object. The *corresponding slide* MUST be a presentation slide. |
| PT\_ClipArt | The *corresponding shape* contains a clipart object. The *corresponding slide* MUST be a presentation slide. |
| PT\_OrgChart | The *corresponding shape* contains an organization chart object. The correspondingslide MUST be a presentation slide. |
| PT\_Media | The *corresponding shape* contains a media object. The *corresponding slide* MUST be a presentation slide. |
| PT\_VerticalObject | The *corresponding shape* contains a generic object with vertical text flow. The *corresponding slide* MUST be a presentation slide. |
| PT\_Picture | The *corresponding shape* contains a picture object. The *corresponding slide* MUST be a presentation slide. |

**size (1 byte):** A [**PlaceholderSize**](#Section_557f629693464db5bdc05acbc5a33617) enumeration that specifies the preferred size of the placeholder shape.

**unused (2 bytes):** Undefined and MUST be ignored.

### RecolorInfoAtom

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a collection of re-color mappings for a [**metafile**](#gt_ae5f028e-7e28-4a0b-bec6-2c87913f7db7) ([[MS-WMF]](%5bMS-WMF%5d.pdf#Section_4813e7fd52d04f42965f228c8b7488d2)).

The *corresponding metafile* is specified by the **Blip** properties ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.3.23) of the **OfficeArtSpContainer** ([MS-ODRAW] section 2.2.14) that contains this **RecolorInfoAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | unused2 | | | | | | | | | | | cColors | | | | | | | | | | | | | | | |
| cFills | | | | | | | | | | | | | | | | monoColor | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgRecolorEntry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused3 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_RecolorInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**A - fShouldRecolor (1 bit):** A bit that specifies whether the re-color mappings are applied.

**B - fMissingColors (1 bit):** A bit that specifies whether **rgRecolorEntry** has more than 64 items with a [RecolorEntryColor](#Section_c4059bd1b1474676ada89ca444130e07) variant. It SHOULD[<97>](#Appendix_A_97" \o "Product behavior note 97) be ignored.

**C - fMissingFills (1 bit):** A **bit** that specifies whether **rgRecolorEntry** has more than 64 items with a [RecolorEntryBrush](#Section_2da771e4494f4258b73b6d011315a3ed)variant. It SHOULD[<98>](#Appendix_A_98" \o "Product behavior note 98) be ignored.

**D - unused1 (1 bit):** Undefined and MUST be ignored.

**E - fMonoRecolor (1 bit):** A bit that specifies whether **monoColor** is used as the destination color instead of the destination colors specified by the [RecolorEntry](#Section_9270c7eca27544869096a599c1e3234a) structures in the **rgRecolorEntry** array.

**unused2 (11 bits):** Undefined and MUST be ignored.

**cColors (2 bytes):** An unsigned integer that specifies the count of items in the **rgRecolorEntry** array with a RecolorEntryColor variant.

**cFills (2 bytes):** An unsigned integer that specifies the count of items in the **rgRecolorEntry** array with a RecolorEntryBrushvariant.

**monoColor (6 bytes):** A [WideColorStruct](#Section_c03b38b48b9c4c5f914ce9819b228619) structure that specifies the destination color if the **fMonoRecolor** bit is set.

**rgRecolorEntry (variable):** An array of RecolorEntry structures that specifies color mappings. The count of items in the array is specified by **cColors** + **cFills**. It MUST contain **cColors** items with a RecolorEntryColor variant. It MUST contain **cFills** items with a RecolorEntryBrushvariant.

**unused3 (variable):** Undefined and MUST be ignored. The size, in bytes, is specified by the following formula:

1. **rh.recLen** – ( 12 + 44 \* ( **cColors** + **cFills** ) )

### RecolorEntry

*Referenced by:* [*RecolorInfoAtom*](#Section_01ac11fb62734b36932d39b861eb144c)

A structure that specifies a color mapping for [**metafile**](#gt_ae5f028e-7e28-4a0b-bec6-2c87913f7db7) records. A color mapping has a source color description and a destination color description. Applying a color mapping to a metafile means to be the same as the source color description with the corresponding fields of the listed metafile records that follow and replace them with metafile records which represent the mapped destination color.

The following metafile ([[MS-WMF]](%5bMS-WMF%5d.pdf#Section_4813e7fd52d04f42965f228c8b7488d2)) records are the targets for possible color replacement.

| Metafile record | Specified in |
| --- | --- |
| **META\_SETTEXTCOLOR** | [MS-WMF] section [2.3.5.26](http://msdn.microsoft.com/en-us/library/2bdfee2b-3016-4a6a-b4cd-c725ce9cb2a0/) |
| **META\_SETBKCOLOR** | [MS-WMF] section [2.3.5.14](http://msdn.microsoft.com/en-us/library/477d3e05-36e6-4fee-a5e3-60149ee71fd5/) |
| **META\_CREATEPENINDIRECT** | [MS-WMF] section [2.3.4.5](http://msdn.microsoft.com/en-us/library/bdb95c1f-c3e7-41cf-8b56-879c6f3441c3/) |
| **META\_CREATEBRUSHINDIRECT** | [MS-WMF] section [2.3.4.1](http://msdn.microsoft.com/en-us/library/8331e35d-0f97-4ec3-b3b0-cfb3281c0642/) |
| **META\_CREATEPATTERNBRUSH** | [MS-WMF] section [2.3.4.4](http://msdn.microsoft.com/en-us/library/6f1c6ba3-7710-42c1-b6e2-1b776c2f769b/) |
| **META\_DIBCREATEPATTERNBRUSH** | [MS-WMF] section [2.3.4.8](http://msdn.microsoft.com/en-us/library/8e83b605-6a87-4fa6-a1b7-82ba7efaa59f/) |
| **META\_DIBSTRETCHBLT** | [MS-WMF] section [2.3.1.3](http://msdn.microsoft.com/en-us/library/e666a66f-b29d-4adb-82da-e00eaf032ea6/) |
| **META\_STRETCHDIB** | [MS-WMF] section [2.3.1.6](http://msdn.microsoft.com/en-us/library/7ebae08d-61ee-4d82-9aa5-9217ba2aa8c1/) |

Let the *corresponding color scheme* be as specified by the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), **HandoutContainer** record (section [2.5.8](#Section_bf6d1f839023412089c3fb69e49d0212)), **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)), or **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) that contains this **RecolorEntry** structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | reserved1 | | | | | | | | | | | | | | | toColor | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| toIndex | | | | | | | | unused | | | | | | | | colorOrBrush (34 bytes) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**A - fDoRecolor (1 bit):** A bit that specifies whether the color mapping is performed.

**reserved1 (15 bits):** MUST be zero and MUST be ignored.

**toColor (6 bytes):** A [WideColorStruct](#Section_c03b38b48b9c4c5f914ce9819b228619) structure that specifies the destination color of the mapping when **toIndex** is greater than or equal to 8. It MUST be ignored if **toIndex** is less than 8.

**toIndex (1 byte):** An unsigned integer that specifies the destination color of the mapping. If the value is less than 8, it is a 0-based index into the *corresponding color scheme*. If the value is greater than or equal to 8, **toColor** is used for the destination color.

**unused (1 byte):** Undefined and MUST be ignored.

**colorOrBrush (34 bytes):** A [RecolorEntryVariant](#Section_b0b1882fc909422caa59ce136510bf0b) structure that specifies the source color of the color mapping.

### RecolorEntryVariant

*Referenced by:* [*RecolorEntry*](#Section_9270c7eca27544869096a599c1e3234a)

A variant structure whose type and meaning are dictated by the value of the **type** field of either of these two structures, as specified in the following table.

| Type | Meaning |
| --- | --- |
| 0x0000 | A [RecolorEntryColor](#Section_c4059bd1b1474676ada89ca444130e07) structure that specifies a source color. |
| 0x0001 | A [RecolorEntryBrush](#Section_2da771e4494f4258b73b6d011315a3ed) structure that specifies a source brush. |

### RecolorEntryColor

*Referenced by:* [*RecolorEntryVariant*](#Section_b0b1882fc909422caa59ce136510bf0b)

A structure that specifies a source color for a [RecolorEntry](#Section_9270c7eca27544869096a599c1e3234a) structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| type | | | | | | | | | | | | | | | | fromColor | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused (26 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | |

**type (2 bytes):** An **unsigned integer** that specifies the variant of the containing RecolorEntryVariant structure. It MUST be 0x0000.

**fromColor (6 bytes):** A [WideColorStruct](#Section_c03b38b48b9c4c5f914ce9819b228619) structure that specifies a source color.

**unused (26 bytes):** Undefined and MUST be ignored.

### RecolorEntryBrush

*Referenced by:* [*RecolorEntryVariant*](#Section_b0b1882fc909422caa59ce136510bf0b)

A structure that specifies a source color for a [RecolorEntry](#Section_9270c7eca27544869096a599c1e3234a) that corresponds to a **LogBrush** Object as specified in [[MS-WMF]](%5bMS-WMF%5d.pdf#Section_4813e7fd52d04f42965f228c8b7488d2) section [2.2.2.10](http://msdn.microsoft.com/en-us/library/e764d08b-dd0e-4040-ba31-7a557310c0d6/). The meaning of the fields corresponds to the meaning of the fields of a **LogBrush** Object.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| type | | | | | | | | | | | | | | | | lbStyle | | | | | | | | | | | | | | | |
| lbColor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | lbHatch | | | | | | | | | | | | | | | |
| fgColor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | bgColor | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bitmapType | | | | | | | | | | | | | | | | pattern | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | |

**type (2 bytes):** An unsigned integer that specifies the variant of the containing RecolorEntryVariant structure. It MUST be 0x0001.

**lbStyle (2 bytes):** An unsigned integer that specifies a brush type. It MUST be a **BrushStyle Enumeration** as specified in [MS-WMF] section [2.1.1.4](http://msdn.microsoft.com/en-us/library/38e6de43-2cfe-428e-874e-391dbf74570c/).

**lbColor (6 bytes):** A [WideColorStruct](#Section_c03b38b48b9c4c5f914ce9819b228619) structure that specifies the color of the **LogBrush** Object. Its interpretation depends on the value of **lbStyle** and is specified in [MS-WMF] section 2.2.2.10.

**lbHatch (2 bytes):** An unsigned integer that specifies a brush hatch type. Its interpretation depends on the value of **lbStyle** and is specified in [MS-WMF] section [2.1.1.12](http://msdn.microsoft.com/en-us/library/3d08f118-08e1-43f0-8d78-9005151b00fe/).

**fgColor (6 bytes):** A WideColorStruct structure that specifies a foreground color. Only used for metafile records of type META\_DIBCREATEPATTERNBRUSH, specified in [MS-WMF] section [2.3.4.8](http://msdn.microsoft.com/en-us/library/8e83b605-6a87-4fa6-a1b7-82ba7efaa59f/). This field represents the color of the first entry of the **DIB** color table, specified in [MS-WMF] section [2.2.2.3](http://msdn.microsoft.com/en-us/library/567172fa-b8a2-4d79-86a2-5e21d6659ef3/). Undefined and MUST be ignored if **lbStyle** is not equal to 0x0003.

**bgColor (6 bytes):** A WideColorStruct structure that specifies a background color. Only used for metafile records of type META\_DIBCREATEPATTERNBRUSH, as specified in [MS-WMF] section 2.3.4.8. This field represents the color of the second entry of the **DIB** color table, as specified in [MS-WMF] section 2.2.2.3. Undefined and MUST be ignored if **lbStyle** is not equal to 0x0003.

**bitmapType (2 bytes):** An unsigned integer that specifies the type of the bitmap if **lbStyle** is equal to 0x0003. It MUST also be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0000 | Color mapping is used for META\_CREATEPATTERNBRUSH records with a monochrome pattern bitmap. |
| 0x0001 | Color mapping is used for META\_DIBCREATEPATTERNBRUSH records. |
| 0x0003 | Color mapping is used for META\_CREATEBRUSHINDIRECT records and  META\_CREATEPATTERNBRUSH records with a non-monochrome pattern bitmap. |

MUST be ignored if **lbStyle** is not equal to 0x0003.

**pattern (8 bytes):** An array of bytes that specifies the bit pattern for a monochrome 8x8 pixel brush. Undefined and MUST be ignored if **lbStyle** is not equal to 0x0003 or if **bitmapType** is equal to 0x0003. If **bitmapType** is equal to 0x0000 it specifies the **Bits** field for a META\_CREATEPATTERNBRUSH record as specified in [MS-WMF] section [2.3.4.4](http://msdn.microsoft.com/en-us/library/6f1c6ba3-7710-42c1-b6e2-1b776c2f769b/). If **bitmapType** is equal to 0x0001 it specifies the **Bits** field of a DeviceIndependentBitmap (DIB) Object ([MS-WMF] section 2.2.2.3) for a META\_DIBCREATEPATTERNBRUSH record as specified in [MS-WMF] sections 2.3.4.8.

### ShapeProgTagsContainer

*Referenced by:* [*ShapeClientRoundtripDataSubContainerOrAtom*](#Section_92bce4f0921c4b5b92d37ade03646250)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional shape data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | SHOULD[<99>](#Appendix_A_99" \o "Product behavior note 99) be 0x000. |
| **rh.recType** | MUST be **RT\_ProgTags** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**rgChildRec (variable):** An array of [ShapeProgTagsSubContainerOrAtom](#Section_a9b8cd9324d3426f9c80bd46a72fa2b7) records that specifies the programmable tags. The size, in bytes, of the array is specified by **rh.recLen**. The array MUST NOT contain more than one of each of the following records: [PP9ShapeBinaryTagExtension](#Section_288d4b7c200a4fbfbfcbe60adba13db8), [PP10ShapeBinaryTagExtension](#Section_a5850b953d584723b94902c802af528d), or [PP11ShapeBinaryTagExtension](#Section_ab3d45de5d374cd69bece6983b085ad9).

### ShapeProgTagsSubContainerOrAtom

*Referenced by:* [*ShapeProgTagsContainer*](#Section_f8ad5874193e43f08400246b29b606bf)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_ProgStringTag](#Section_38fb1fa50a62477a8b14178df22de812) | A [ProgStringTagContainer](#Section_4c2f2168082c433d8356471fa54af929) record that specifies additional shape data. |
| RT\_ProgBinaryTag | A [ShapeProgBinaryTagContainer](#Section_f72ef91182fc456d9392759ea3940516) record that specifies additional shape data. |

### ShapeProgBinaryTagContainer

*Referenced by:* [*ShapeProgTagsSubContainerOrAtom*](#Section_a9b8cd9324d3426f9c80bd46a72fa2b7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional binary shape data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ProgBinaryTag](#Section_38fb1fa50a62477a8b14178df22de812). |

**rec (variable):** A [ShapeProgBinaryTagSubContainerOrAtom](#Section_28c25608369e42a798166b3515a4ecca) record that specifies additional shape data.

### ShapeProgBinaryTagSubContainerOrAtom

*Referenced by:* [*ShapeProgBinaryTagContainer*](#Section_f72ef91182fc456d9392759ea3940516)

A variable type record whose type and meaning are dictated by the value of **tagNameAtom.tagName** for [UnknownBinaryTag](#Section_4f7ad45eb5844a93b481894f5c671160) or by the value of **tagName** for [PP9ShapeBinaryTagExtension](#Section_288d4b7c200a4fbfbfcbe60adba13db8), [PP10ShapeBinaryTagExtension](#Section_a5850b953d584723b94902c802af528d), [PP11ShapeBinaryTagExtension](#Section_ab3d45de5d374cd69bece6983b085ad9), as specified in the following table.

| Value | Meaning |
| --- | --- |
| "\_\_\_PPT9" | A PP9ShapeBinaryTagExtension record pair that specifies additional shape data. It MAY[<100>](#Appendix_A_100" \o "Product behavior note 100) be ignored and MUST be preserved. |
| "\_\_\_PPT10" | A PP10ShapeBinaryTagExtension record pair that specifies additional shape data. It MAY[<101>](#Appendix_A_101" \o "Product behavior note 101) be ignored and MUST be preserved. |
| "\_\_\_PPT11" | A PP11ShapeBinaryTagExtension record pair that specifies additional shape data. It MAY[<102>](#Appendix_A_102" \o "Product behavior note 102) be ignored and MUST be preserved. |
| Any other value | An UnknownBinaryTag record pair that specifies additional shape data. It MUST be ignored and MUST be preserved. |

### PP9ShapeBinaryTagExtension

*Referenced by:* [*ShapeProgBinaryTagSubContainerOrAtom*](#Section_28c25608369e42a798166b3515a4ecca)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional shape data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (14 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | rhData | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | styleTextPropAtom (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x0000000E. |

**tagName (14 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT9".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**styleTextPropAtom (variable):** A [StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f) record that specifies additional text style properties.

### PP10ShapeBinaryTagExtension

*Referenced by:* [*ShapeProgBinaryTagSubContainerOrAtom*](#Section_28c25608369e42a798166b3515a4ecca)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional shape data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| styleTextPropAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for the first record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT10".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**styleTextPropAtom (variable):** A [StyleTextProp10Atom](#Section_663f260adf984185b4fdf092d3826548) record that specifies additional text style properties.

### PP11ShapeBinaryTagExtension

*Referenced by:* [*ShapeProgBinaryTagSubContainerOrAtom*](#Section_28c25608369e42a798166b3515a4ecca)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) with additional shape data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rhData | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| styleTextPropAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000010. |

**tagName (16 bytes):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the programmable tag name. It MUST be "\_\_\_PPT11".

**rhData (8 bytes):** A **RecordHeader** structure (section 2.3.1) that specifies the header for the second record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rhData.recVer** | MUST be 0x0. |
| **rhData.recInstance** | MUST be 0x000. |
| **rhData.recType** | MUST be RT\_BinaryTagDataBlob. |

**styleTextPropAtom (variable):** A [StyleTextProp11Atom](#Section_b0e6e86508654d1bb5d3a2a805725915) record that specifies additional text style properties.

## Animation Types

### AnimationInfoContainer

*Referenced by:* [*OfficeArtClientData*](#Section_ac3b454db5ea4da8a57c32fc08ed332a)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the animation and sound information for a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| animationAtom (36 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| animationSound (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_AnimationInfo](#Section_38fb1fa50a62477a8b14178df22de812). |

**animationAtom (36 bytes):** An [AnimationInfoAtom](#Section_4361cc1fcd514e61a451d252bf8e1069) record that specifies the animation effect information for the shape. It SHOULD[<103>](#Appendix_A_103" \o "Product behavior note 103) be ignored.

**animationSound (variable):** An optional **SoundContainer** record (section [2.4.16.3](#Section_8c5498fa18324659a02bd23e28ef21b3)) that specifies the sound for the animation specified by the **animationAtom**. If this field exists, it overrides the **animationAtom.soundIdRef**.

### AnimationInfoAtom

*Referenced by:* [*AnimationInfoContainer*](#Section_a35de8fea76b43fc8e53ebcff8843705)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the animation information for a shape or text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dimColor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | | C | | D | | E | | F | | G | | H | | reserved | | | | | | | | | | | | | | | |
| soundIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| delayTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| orderID | | | | | | | | | | | | | | | | slideCount | | | | | | | | | | | | | | | |
| animBuildType | | | | | | | | animEffect | | | | | | | | animEffectDirection | | | | | | | | animAfterEffect | | | | | | | |
| textBuildSubEffect | | | | | | | | oleVerb | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_AnimationInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x0000001C. |

**dimColor (4 bytes):** A [ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) structure that specifies a color for the dim effect after the animation is complete.

**A - fReverse (2 bits):** An **unsigned integer** that specifies whether the animation plays in the reverse direction. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Do not play in the reverse direction. |
| 0x1 | Play in the reverse direction. |

**B - fAutomatic (2 bits):** An **unsigned integer** that specifies whether the animation starts automatically. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Start manually by click. |
| 0x1 | Start automatically. |

**C - fSound (2 bits):** An **unsigned integer** that specifies whether the animation has an associated sound. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Has no associated sound. |
| 0x1 | Has associated sound. |

**D - fStopSound (2 bits):** An **unsigned integer** that specifies whether all playing sounds are stopped when this animation begins. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | All playing sounds are not stopped. |
| 0x1 | All playing sounds are stopped. |

**E - fPlay (2 bits):** An unsigned integer that specifies whether an associated sound, media or action verb is activated when the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) is clicked. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | No behavior happens when the shape is clicked. |
| 0x1 | The associated sound, media or action verb plays when the shape is clicked. |

**F - fSynchronous (2 bits):** An unsigned integer that specifies that the animation, while playing, stops other [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b) actions. If the shape is a media or [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096), this field is valid; otherwise, it MUST be ignored. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Do not stop other slide show actions. |
| 0x1 | Stop other slide show actions. |

**G - fHide (2 bits):** An unsigned integer that specifies whether the shape is hidden while the animation is not playing. If the shape is a media or OLE object, this field is valid; otherwise, it MUST be ignored. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Do not hide the shape while the animation is not playing. |
| 0x1 | Hide the shape while the animation is not playing. |

**H - fAnimateBg (2 bits):** An unsigned integer that specifies whether the background of the shape is animated. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Do not animate the background. |
| 0x1 | Animate the background. |

**reserved (16 bits):** MUST be zero, and MUST be ignored.

**soundIdRef (4 bytes):** A [SoundIdRef](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) that specifies the value to refer to in the **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)) to locate the embedded audio.

**delayTime (4 bytes):** A **signed integer** that specifies the delay time, in milliseconds, before the animation starts to play. If **fAutomatic** is 0x1, this value MUST be greater than or equal to 0; otherwise, this field MUST be ignored.

**orderID (2 bytes):** A signed integer that specifies the order of the animation in the slide. It MUST be greater than or equal to -2. The value -2 specifies that this animation follows the order of the corresponding [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) on the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). The value -1 SHOULD NOT[<104>](#Appendix_A_104" \o "Product behavior note 104) be used.

**slideCount (2 bytes):** An unsigned integer that specifies the number of slides that this animation continues playing. This field is utilized only in conjunction with media. The value 0xFFFFFFFF specifies that the animation plays for one slide.

**animBuildType (1 byte):** An [**AnimBuildTypeEnum**](#Section_ebc572643737436da80ec774afae16e8) enumeration that specifies the animation build type for the animation effect.

**animEffect (1 byte):** An unsigned integer that specifies the animation effect type for the shape. The following diagrams are for example purposes only. Exact rendering of any animation effect is determined by the rendering application. As such, the same animation effect can have many variations depending on the implementation. It MUST be a value from the following table:

| Value | Description |
| --- | --- |
| 0x00 | Cut animation effect that replaces the previous object instance with the new object instance instantaneously, as illustrated in the following example:  cut animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Not through black * 0x01: Through black * 0x02: The same as 0x00 |
| 0x01 | Random animation effect that chooses a random effect with a random applicable direction from the set available. This effect can be different each time it is used. **animEffectDirection** MUST be ignored. |
| 0x02 | Blinds animation effect that uses a set of horizontal or vertical bars and wipes them either left-to-right or top-to-bottom, respectively, until the new object instance is fully shown, as illustrated in the following example:  Blinds animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Vertical direction * 0x01: Horizontal direction |
| 0x03 | Checker animation effect that uses a set of horizontal or vertical checkerboard squares and wipes them either left-to-right or top-to-bottom, respectively, until the new object instance is fully shown, as illustrated in the following example:  checker animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Horizontal direction * 0x01: Vertical direction |
| 0x04 | Cover animation effect that moves the new object instance in from the specified direction, continually covering more of the previous object instance until the new object instance is fully shown, as illustrated in the following example:  cover animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Cover from the right to the left side of the object. * 0x01: Cover from the bottom to the top side of the object. * 0x02: Cover from the left to the right side of the object. * 0x03: Cover from the top to the bottom side of the object. * 0x04: Cover from the bottom-right to the top-left corner of the object. * 0x05: Cover from the bottom-left to the top-right corner of the object. * 0x06: Cover from the top-right to the bottom-left corner of the object. * 0x07: Cover from the top-left to the bottom-right corner of the object. |
| 0x05 | Dissolve animation effect that uses a set of randomly placed squares on the object instance that continue to be added to until the new object instance is fully shown, as illustrated in the following example:  dissolve animation effect  **animEffectDirection** MUST be 0x00. |
| 0x06 | Fade animation effect that smoothly fades the previous object instance either directly to the new object instance or first to a black screen and then to the new object instance, as illustrated in the following example:  fade animation effect  **animEffectDirection** MUST be 0x00. |
| 0x07 | Pull animation effect that moves the previous object instance out from the specified direction, continually revealing more of the new object instance until the new object instance is fully shown, as illustrated in the following example:  pull animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Reveal from the right to the left side of the object. * 0x01: Reveal from the bottom to the top side of the object. * 0x02: Reveal from the left to the right side of the object. * 0x03: Reveal from the top to the bottom side of the object. * 0x04: Reveal from the bottom-right to the top-left corner of the object. * 0x05: Reveal from the bottom-left to the top-right corner of the object. * 0x06: Reveal from the top-right to the bottom-left corner of the object. * 0x07: Reveal from the top-left to the bottom-right corner of the object. |
| 0x08 | Random bar animation effect that uses a set of randomly placed horizontal or vertical bars on the object instance that continue to be added to until the new object instance is fully shown, as illustrated in the following example:  random bar animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Horizontal direction * 0x01: Vertical direction |
| 0x09 | Strips animation effect that uses a set of bars that are arranged in a staggered fashion and wipes them across the screen until the new object instance is fully shown, as illustrated in the following example:  strips animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x04: Strips move from the bottom-right to the top-left corner of the object. * 0x05: Strips move from the bottom-left to the top-right corner of the object. * 0x06: Strips move from the top-right to the bottom-left corner of the object. * 0x07: Strips move from the top-left to the bottom-right corner of the object. |
| 0x0A | Wipe animation effect that wipes the new object instance over the previous object instance from one edge of the screen to the opposite until the new object instance is fully shown, as illustrated in the following example:  wipes animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Wipe effect is from the right to the left side of the object. * 0x01: Wipe effect is from the bottom to the top side of the object. * 0x02: Wipe effect is from the left to the right side of the object. * 0x03: Wipe effect is from the top to the bottom side of the object. |
| 0x0B | Zoom animation effect that uses a box pattern centered on the object instance that increases or decreases in size until the new object instance is fully shown, as illustrated in the following example:  zoom animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Outward direction * 0x01: Inward direction |
| 0x0C | Fly animation effect that moves the new object instance in from the specified direction to the object’s on-screen location, as illustrated in the following example:  Fly animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: Fly from the left side of the [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192). * 0x01: Fly from the top side of the presentation slide. * 0x02: Fly from the right side of the presentation slide. * 0x03: Fly from the bottom side of the presentation slide. * 0x04: Fly from the top-left corner of the presentation slide. * 0x05: Fly from the top-right corner of the presentation slide. * 0x06: Fly from the bottom-left corner of the presentation slide. * 0x07: Fly from the bottom-right corner of the presentation slide. * 0x08: Fly from the left edge of the shape or text. * 0x09: Fly from the bottom edge of the shape or text. * 0x0A: Fly from the right edge of the shape or text. * 0x0B: Fly from the top edge of the shape or text. * 0x0C: Crawl from the left side of the presentation slide. * 0x0D: Crawl from the top side of the presentation slide. * 0x0E: Crawl from the right side of the presentation slide. * 0x0F: Crawl from the bottom side of the presentation slide. * 0x10: The shape or text zooms in from zero size to its full size, and its center keeps unchanged. * 0x11: The shape or text zooms in from half of its size to its full size, and its center remains unchanged. * 0x12: The shape or text zooms out from 4 times its size to its full size, and its center remains unchanged. * 0x13: The shape or text zooms out from 1.5 times its size to its full size, and its center remains unchanged. * 0x14: The shape or text zooms in from zero size to its full size, and its center moves from the screen center to its actual center. * 0x15: The shape or text zooms out from 4 times its size to its full size, and it moves from the bottom side of the screen to its actual position. * 0x16: The shape or text stretches from its center to both left and right. * 0x17: The shape or text stretches from its left side to its right side. * 0x18: The shape or text stretches from its top side to its bottom side. * 0x19: The shape or text stretches from its right side to its left side. * 0x1A: The shape or text stretches from its bottom side to its top side. * 0x1B: The shape or text rotates around the vertical axis that passes through its center. * 0x1C: The shape or text flies in a spiral. |
| 0x0D | Split animation that reveals the new object instance directly on top of the previous one by wiping either horizontally or vertically from the outside in, or from the inside out, until the new object instance is fully shown, as illustrated in the following example:  split animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x00: The split animation plays horizontally from the middle to both the top and bottom of the shape or text. * 0x01: The split animation plays horizontally from the top and bottom to the middle of the shape or text. * 0x02: The split animation plays vertically from the middle to both the left and right of the shape or text. * 0x03: The split animation plays vertically from the left and right to the middle of the shape or text. |
| 0x0E | Flash animation effect that displays the new object instance for a period of time and then hides the object from view, as illustrated in the following example:  flash animation effect  **animEffectDirection** specifies the time when the flash takes place. The following table is for description purposes only. Exact time when the flash takes place is determined by the application.  The **animEffectDirection** value MUST be one of the following:   * 0x00: Flash takes place after a short time. * 0x01: Flash takes place after a medium time. * 0x02: Flash takes place after a long time. |
| 0x11 | Diamond animation effect that uses a diamond pattern centered on the object instance that increases in size until the new object instance is fully shown, as illustrated in the following example:  diamond animation effect  **animEffectDirection** MUST be 0x00. |
| 0x12 | Plus animation effect that uses a plus pattern centered on the object instance that increases in size until the new object instance is fully shown, as illustrated in the following example:  plus animation effect  **animEffectDirection** MUST be 0x00. |
| 0x13 | Wedge animation effect that uses two radial edges that wipe from top to bottom in opposite directions until the new object instance is fully shown, as illustrated in the following example:  wedge animation effect  **animEffectDirection** MUST be 0x00. |
| 0x1A | Wheel animation effect that uses a set of radial edges and wipes them in the clockwise direction until the new object instance is fully shown, as illustrated in the following example:  wheel animation effect  The **animEffectDirection** value MUST be one of the following:   * 0x01: Use 1 spoke. * 0x02: Use 2 spokes. * 0x03: Use 3 spokes. * 0x04: Use 4 spokes. * 0x08: Use 8 spokes. |
| 0x1B | Circle animation effect that uses a circle pattern centered on the object instance that increases in size until the new object instance is fully shown, as illustrated in the following example:  circle animation effect  **animEffectDirection** MUST be 0x00. |

**animEffectDirection (1 byte):** An **unsigned integer** that specifies the direction of the animation effect. It MUST be a value as specified by the **animEffect** field.

**animAfterEffect (1 byte):** An [**AnimAfterEffectEnum**](#Section_4d043d499e804992884f02375f6bdcd3) enumeration that specifies the behavior of the shape or text after the animation effect is finished.

**textBuildSubEffect (1 byte):** A [**TextBuildSubEffectEnum**](#Section_42f272ca73634e5098aeaa66da123624) enumeration that specifies the behavior of text in the animation effect.

**oleVerb (1 byte):** An [**OLEVerbEnum**](#Section_d3f3afeef16e41e7b03832a789f2e85b) enumeration that SHOULD[<105>](#Appendix_A_105" \o "Product behavior note 105) specify the OLE verb associated with this shape.

**unused (2 bytes):** Undefined and MUST be ignored.

### HashCode10Atom

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the hash code for the animation information for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hash | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_HashCodeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**hash (4 bytes):** An **unsigned integer** that specifies a hash value for the animation information of all shapes in a slide. To calculate the hash value, a random array MUST be initialized first, as specified in the following pseudocode:

* Define **randomArray** as an array of 256 rows and 256 columns
* Initialize all elements of randomArray with 0x00000000
* Set **randomSeed** to 0x00000001
  + FOR each row of **randomArray**
    - FOR each column of **randomArray**
    - Set r0 to **randomSeed**
    - Set r1 to ((r0 \* 0x000343FD + 0x00269EC3) >> 16) & 0x00007FFF
    - Set r2 to ((r1 \* 0x000343FD + 0x00269EC3) >> 16) & 0x00007FFF
    - Set r3 to ((r2 \* 0x000343FD + 0x00269EC3) >> 16) & 0x00007FFF
    - Set r4 to ((r3 \* 0x000343FD + 0x00269EC3) >> 16) & 0x00007FFF
    - Set **randomSeed** to r4
    - Set r1 to (r1 % 0x00000100)
    - Set r2 to (r2 % 0x00000100) << 8
    - Set r3 to (r3 % 0x00000100) << 16
    - Set r4 to (r4 % 0x00000100) << 24
    - Set **randomArray** position (row, column) to r4 | r3 | r2 | r1
    - END FOR
  + END FOR

Then, the random array can be used to calculate hash values for all slides, as specified in the following pseudocode:

* Set hash to 0x00000000
  + FOR each shape in the slide
  + Define **animInfoAtom** as **AnimationInfoAtom**
  + Initialize all bytes of **animInfoAtom** with zero
    - IF **AnimationInfoAtom** exists in the shape THEN
    - Read the animation information into **animInfoAtom**
    - END IF
  + Set **shapeId** to identifier of the shape
    - FOR each byte in **animInfoAtom**
    - Set **byteIndex** to the index of the byte in **animInfoAtom**
    - Set **rowIndex** to (shapeId \* (**byteIndex** + 1)) % 256
    - Set **hash** to **hash** ^ **randomArray**[**rowIndex**][**byte**]
    - END FOR
  + END FOR

### BuildListContainer

*Referenced by:* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies all animation [**builds**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_BuildList](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgChildRec (variable):** An array of [BuildListSubContainer](#Section_23d80d2c186d4f918ef0ccf083ddb94f) records that specifies all builds for a slide. Each item specifies build information for a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

### BuildListSubContainer

*Referenced by:* [*BuildListContainer*](#Section_48ffef8e5b8d4711a598cfa1f9fcb252)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_ParaBuild](#Section_38fb1fa50a62477a8b14178df22de812) | A [ParaBuildContainer](#Section_4bd5c65e913445eead0d18b57d147c7e) record that specifies text build information. |
| RT\_ChartBuild | A [ChartBuildContainer](#Section_241274967eae4564825b186f6360ffcc) record that specifies chart build information. |
| RT\_DiagramBuild | A [DiagramBuildContainer](#Section_fb5d0358ee2644e8bf0e04d035401fd2) record that specifies diagram build information. |

### ParaBuildContainer

*Referenced by:* [*BuildListSubContainer*](#Section_23d80d2c186d4f918ef0ccf083ddb94f)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) information for text paragraphs in a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| paraBuildAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgParaBuildLevel (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ParaBuild](#Section_38fb1fa50a62477a8b14178df22de812). |

**buildAtom (24 bytes):** A [BuildAtom](#Section_baa3c302b96c4f0b851708c50c38952b) record that specifies the information for the build.

**paraBuildAtom (24 bytes):** A [ParaBuildAtom](#Section_8eeb2908927340e8bb4330d07220ba58) record that specifies the information for the paragraph build.

**rgParaBuildLevel (variable):** An array of [ParaBuildLevel](#Section_18419a57831c4c22b620b2540292df6c) that specifies the template effects for the text. If **paraBuildAtom**.**paraBuild** is [TLPB\_AsAWhole](#Section_54aa20499fb84e5293fbad4c95bc5f29), **rgParaBuildLevel** MUST contain one and only one ParaBuildLevel that specifies the template effects for the text. Otherwise, **rgParaBuildLevel** MUST contain the same number of ParaBuildLevel items as the number of paragraph levels in the shape, ordered from level 1 to the biggest level. Each ParaBuildLevel item in the array specifies the template effects for a paragraph level in the text.

### BuildAtom

*Referenced by:* [*ChartBuildContainer*](#Section_241274967eae4564825b186f6360ffcc)*,* [*DiagramBuildContainer*](#Section_fb5d0358ee2644e8bf0e04d035401fd2)*,* [*ParaBuildContainer*](#Section_4bd5c65e913445eead0d18b57d147c7e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) information for a chart, diagram or text.

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fExpanded | | | | | | | | fUIExpanded | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_BuildAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000010. |

**buildType (4 bytes):** A [**BuildTypeEnum**](#Section_c197f4ecca244672933455a17509fef6) enumeration that specifies the build type.

**buildId (4 bytes):** An unsigned integer that specifies the [**build identifier**](#gt_0748643f-8a66-42ea-959a-3acd533eedc5). The combination of **buildId** and **shapeIdRef** MUST be unique for all builds in the slide.

**shapeIdRef (4 bytes):** An unsigned integer that specifies the target [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) that this build is applied to.

**fExpanded (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether this build has been expanded into [**time nodes**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

**fUIExpanded (1 byte):** A **bool1** that specifies whether this build is shown as expanded in the user interface.

**unused (2 bytes):** Undefined and MUST be ignored.

### ParaBuildAtom

*Referenced by:* [*ParaBuildContainer*](#Section_4bd5c65e913445eead0d18b57d147c7e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information for a paragraph [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252).

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| paraBuild | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildLevel | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fAnimBackground | | | | | | | | fReverse | | | | | | | | fUserSetAnimBackground | | | | | | | | fAutomatic | | | | | | | |
| delayTime | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):**  A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_ParaBuildAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000010. |

**paraBuild (4 bytes):** A [**ParaBuildEnum**](#Section_54aa20499fb84e5293fbad4c95bc5f29) enumeration that specifies the paragraph build type for text in the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

**buildLevel (4 bytes):** An unsigned integer that specifies which paragraph level the paragraph build applies to. Paragraphs in level 1 to level **buildLevel** expand individually, and paragraphs in other levels animate at the same time as level **buildLevel**. If **paraBuild** is not TLPB\_BuildByNthLevel, **buildLevel** MUST be ignored.

**fAnimBackground (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether the background animates. If there is an attached shape or a background on the text box or text [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), **fAnimBackground** is valid; otherwise, it MUST be ignored. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | The background is not animated. |
| 0x01 | The background is animated. |

**fReverse (1 byte):** A **bool1** that specifies whether the animation plays in reverse order. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00 | The animation does not play in reverse order. |
| 0x01 | The animation plays in reverse order. |

**fUserSetAnimBackground (1 byte):** A **bool1** that specifies whether **fAnimBackground** has been toggled by any users. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | **fAnimBackground** has never been toggled. |
| 0x01 | **fAnimBackground** has been toggled. |

**fAutomatic (1 byte):** A **bool1** that specifies whether to automatically proceed to the next build step after the current build step is finished. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | Do not automatically proceed to the next build step. |
| 0x01 | Automatically proceed to the next build step. |

**delayTime (4 bytes):** An unsigned integer that specifies the waiting time, in milliseconds, from the time when the current build step is finished to the time when the next build step starts. It MUST be ignored if **fAutomatic** is 0x00.

### ParaBuildLevel

*Referenced by:* [*ParaBuildContainer*](#Section_4bd5c65e913445eead0d18b57d147c7e)

A structure that specifies information about the [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) step for a specific paragraph level.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| levelInfoAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeNode (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**levelInfoAtom (12 bytes):** A [LevelInfoAtom](#Section_ada7819fc1d54331b64caba3db29ce4d) record that specifies the paragraph level.

**timeNode (variable):** An **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) that specifies all time nodes for the paragraph level specified by the **levelInfoAtom**.

### LevelInfoAtom

*Referenced by:* [*ParaBuildLevel*](#Section_18419a57831c4c22b620b2540292df6c)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the level for a paragraph.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| level | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_LevelInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004 |

**level (4 bytes):** An **unsigned integer** that specifies the paragraph level. It MUST be less than or equal to 0x00000009. It SHOULD[<106>](#Appendix_A_106" \o "Product behavior note 106) be less than or equal to 0x00000005.

### ChartBuildContainer

*Referenced by:* [*BuildListSubContainer*](#Section_23d80d2c186d4f918ef0ccf083ddb94f)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) information for a chart.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| chartBuildAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ChartBuild](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000028. |

**buildAtom (24 bytes):** A [BuildAtom](#Section_baa3c302b96c4f0b851708c50c38952b) record that specifies the information for the build.

**chartBuildAtom (16 bytes):** A [ChartBuildAtom](#Section_f3f0965c0aaf43099601fc33308ff0aa) record that specifies the information for the chart build.

### ChartBuildAtom

*Referenced by:* [*ChartBuildContainer*](#Section_241274967eae4564825b186f6360ffcc)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information for a chart [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| chartBuild | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fAnimBackground | | | | | | | | unused | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ChartBuildAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**chartBuild (4 bytes):** A [**ChartBuildEnum**](#Section_5f2588d86ede457eb059b27561da0ab4) enumeration that specifies the chart build type.

**fAnimBackground (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether the background of the chart animates separately. If **chartBuild** is TLCB\_AsOneObject, **fAnimBackground** MUST be ignored. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | Do not animate the background. |
| 0x01 | Animate the background. |

**unused (3 bytes):** Undefined and MUST be ignored.

### DiagramBuildContainer

*Referenced by:* [*BuildListSubContainer*](#Section_23d80d2c186d4f918ef0ccf083ddb94f)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) information for a diagram.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| buildAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| diagramBuildAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_DiagramBuild](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000024. |

**buildAtom (24 bytes):** A [BuildAtom](#Section_baa3c302b96c4f0b851708c50c38952b) record that specifies the information for the build.

**diagramBuildAtom (12 bytes):** A [DiagramBuildAtom](#Section_f23973b309df492e99149cd331f8a5bc) record that specifies the information for the diagram build.

### DiagramBuildAtom

*Referenced by:* [*DiagramBuildContainer*](#Section_fb5d0358ee2644e8bf0e04d035401fd2)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information for a diagram [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| diagramBuild | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_DiagramBuildAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**diagramBuild (4 bytes):** A [**DiagramBuildEnum**](#Section_65a3ad6bba9b4c92a82a7f8a62203273) enumeration that specifies the diagram build type.

### ExtTimeNodeContainer

*Referenced by:* [*ParaBuildLevel*](#Section_18419a57831c4c22b620b2540292df6c)*,* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f). This time node is used to store all information necessary to cause a time-based or an action-based effect to occur during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). Each time node effect has a corresponding object to which the effect applies.

At most one of the following fields MUST exist: **timeAnimateBehavior**, **timeColorBehavior**, **timeEffectBehavior**, **timeMotionBehavior**, **timeRotationBehavior**, **timeScaleBehavior**, **timeSetBehavior**, or **timeCommandBehavior**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeNodeAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timePropertyList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeAnimateBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeColorBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeEffectBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeMotionBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeRotationBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeScaleBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeSetBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeCommandBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clientVisualElement (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeIterateDataAtom (28 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeSequenceDataAtom (28 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgBeginTimeCondition (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgEndTimeCondition (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeEndSyncTimeCondition (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTimeModifierAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSubEffect (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgExtTimeNodeChildren (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_TimeExtTimeNodeContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**timeNodeAtom (40 bytes):** A [TimeNodeAtom](#Section_a6b40fd7decd4d6e991a10394458c6a8) record that specifies time-based attributes of this time node.

**timePropertyList (variable):** An optional **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that specifies a list of attributes of the time node.

**timeAnimateBehavior (variable):** An optional **TimeAnimateBehaviorContainer** record (section [2.8.29](#Section_bc65cd1c14a74c0dbc2d192bab64a713)) that specifies a generic animation behavior that can animate any property of an object. It MUST exist only if **timeNodeAtom.type** is [TL\_TNT\_Behavior](#Section_8b2c01817e764bc79372285dcb67ae6f).

**timeColorBehavior (variable):** An optional **TimeColorBehaviorContainer** record (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)) that specifies a color animation behavior that changes the color of an object. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeEffectBehavior (variable):** An optional **TimeEffectBehaviorContainer** record (section [2.8.61](#Section_498a5d0f07254a06a7de7c67394e9146)) that specifies an effect-animation behavior that transforms the image of an object. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeMotionBehavior (variable):** An optional **TimeMotionBehaviorContainer** record (section [2.8.63](#Section_40b9860a04a54946ae4b51fdd1176cec)) that specifies a motion-animation behavior that moves a positioned object along a path. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeRotationBehavior (variable):** An optional **TimeRotationBehaviorContainer** record (section [2.8.65](#Section_2ef1f0c624534be7875ea1a7d7201580)) that specifies a rotation animation behavior that rotates an object. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeScaleBehavior (variable):** An optional **TimeScaleBehaviorContainer** record (section [2.8.67](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a)) that specifies a scale-animation behavior that changes the size of an object. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeSetBehavior (variable):** An optional **TimeSetBehaviorContainer** record (section [2.8.69](#Section_5428095fe4c443d0ad36b8b240e1338b)) that specifies a set-animation behavior that assigns a value to a property of an object. It MUST exist if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeCommandBehavior (variable):** An optional **TimeCommandBehaviorContainer** record (section [2.8.71](#Section_d188069b704c4f9d838898a7eb357f0f)) that specifies a command-animation behavior that performs a command as an animation. It MUST exist only if **timeNodeAtom.type** field is TL\_TNT\_Behavior.

**clientVisualElement (variable):** An optional **ClientVisualElementContainer** record (section [2.8.44](#Section_80b3266a1fe64140acef0483ac355c89)) that specifies a media file to be played. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Media.

**timeIterateDataAtom (28 bytes):** An optional [TimeIterateDataAtom](#Section_96e2df55a3be4175a8307dc3c3ae46ca) record that specifies how an animation is applied to the subelements of a target object for a repeated effect.

**timeSequenceDataAtom (28 bytes):** An optional [TimeSequenceDataAtom](#Section_342b92a273df4b0b9878862f3532d570) record that specifies sequencing information for the child nodes of this time node. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Sequential.

**rgBeginTimeCondition (variable):** An optional array of **TimeConditionContainer** record (section [2.8.75](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)) that specifies the [**time conditions**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704) that MUST be used in one of the following situations:

* When the **rh.recInstance** field of a **TimeConditionContainer** record is [TL\_CT\_Begin](#Section_a6a1754c4001423a8d0ee62630705624), any of these time conditions determines when this time node will be activated.
* When the **rh.recInstance** field of a **TimeConditionContainer** record is TL\_CT\_Next and the **timeNodeAtom.type** field is TL\_TNT\_Sequential, any of these time conditions determines when the next child time node will be activated.

The array continues while the **rh.recType** field of the **TimeConditionContainer** record is equal to RT\_TimeConditionContainer and one of the two aforementioned situations applies.

**rgEndTimeCondition (variable):** An optional array of **TimeConditionContainer** records (section 2.8.75) that specifies the time conditions that MUST be utilized in one of the following situations:

* When the **rh.recInstance** field of a **TimeConditionContainer** record is TL\_CT\_End, any of these time conditions determines when this time node will be deactivated.
* When the **rh.recInstance** field of a **TimeConditionContainer** record is TL\_CT\_Previous and the **timeNodeAtom.type** field is TL\_TNT\_Sequential, any of these time conditions determines when the next child time node will be deactivated.

The array continues while the **rh.recType** field of the **TimeConditionContainer** record is equal to RT\_TimeConditionContainer and one of the two aforementioned situations is applies.

**timeEndSyncTimeCondition (variable):** An optional **TimeConditionContainer** record (section 2.8.75) that specifies how to synchronize the stopping of the child nodes of this time node. The **timeEndSyncTimeCondition.rh.recInstance** sub-field MUST be TL\_CT\_EndSync.

**rgTimeModifierAtom (variable):** An optional array of [TimeModifierAtom](#Section_bbfa8706196c4508934c8007a84773ea) records that specifies the modification records that store the type of data to be modified and the new data value. The array continues while the **rh.recType** field of the TimeModifierAtom record is equal to RT\_TimeModifier.

**rgSubEffect (variable):** An optional array of [SubEffectContainer](#Section_8f1586ac86864bda9ba58cc43ba91642) that specifies the subordinate time nodes whose start time depends on the relation to this time node. The relationship is specified in the [TimeMasterRelType](#Section_a55a946ac8df4659a2934fe3370e4706) record contained in the **timePropertyList** field of the SubEffectContainer record. The array continues while the **rh.recType** field of the SubEffectContainer record is equal to RT\_TimeSubEffectContainer.

**rgExtTimeNodeChildren (variable):** An array of **ExtTimeNodeContainer** that specifies the child time nodes of this time node.

### SubEffectContainer

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a subordinate [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) whose start time depends on the relation to its master time node.

At most one of the following fields MUST exist: **timeColorBehavior**, **timeSetBehavior**, or **timeCommandBehavior**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeNodeAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timePropertyList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeColorBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeSetBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| timeCommandBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clientVisualElement (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgBeginTimeCondition (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgEndTimeCondition (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTimeModifierAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_TimeSubEffectContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**timeNodeAtom (40 bytes):** A [TimeNodeAtom](#Section_a6b40fd7decd4d6e991a10394458c6a8) record that specifies some attributes of this subordinate time node. The **timeNodeAtom.type** subfield MUST be [TL\_TNT\_Behavior](#Section_8b2c01817e764bc79372285dcb67ae6f) or TL\_TNT\_Media.

**timePropertyList (variable):** An optional **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that specifies a list of attributes of the subordinate time node.

**timeColorBehavior (variable):** An optional **TimeColorBehaviorContainer** record (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)) that specifies a color animation behavior that changes the color of an object. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeSetBehavior (variable):**  An optional **TimeSetBehaviorContainer** record (section [2.8.69](#Section_5428095fe4c443d0ad36b8b240e1338b)) that specifies a set animation behavior that assigns a value to a property of an object. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Behavior.

**timeCommandBehavior (variable):** An optional **TimeCommandBehaviorContainer** record (section [2.8.71](#Section_d188069b704c4f9d838898a7eb357f0f)) that specifies a command-animation behavior that performs a command as an animation. It MUST exist if and only if the **timeCommandBehavior.rh.recType** field is RT\_TimeCommandBehaviorContainer and the **timeNodeAtom.type** field is TL\_TNT\_Behavior.

**clientVisualElement (variable):** An optional **ClientVisualElementContainer** record (section [2.8.44](#Section_80b3266a1fe64140acef0483ac355c89)) that specifies a media to be played. It MUST exist only if **timeNodeAtom.type** is TL\_TNT\_Media.

**rgBeginTimeCondition (variable):**  An optional array of **TimeConditionContainer** records (section [2.8.75](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)) that specifies the [**time conditions**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704). It MUST be used when the **rh.recInstance** field of a **TimeConditionContainer** record is [TL\_CT\_Begin](#Section_a6a1754c4001423a8d0ee62630705624). Any of these time conditions determine when this subordinate time node will be activated.

The array continues while the **rh.recType** field of the **TimeConditionContainer** record is equal to RT\_TimeConditionContainer and the situation in the previous paragraph applies.

**rgEndTimeCondition (variable):**  An optional array of **TimeConditionContainer** records that specifies the time conditions. It MUST be used when the **rh.recInstance** field of a **TimeConditionContainer** item is TL\_CT\_End. Any of these time conditions determines when this subordinate time node will be deactivated.

The array continues while the **rh.recType** field of the **TimeConditionContainer** record is equal to RT\_TimeConditionContainer and the previous situation applies.

**rgTimeModifierAtom (variable):** An optional array of [TimeModifierAtom](#Section_bbfa8706196c4508934c8007a84773ea) records that specifies the modification records that store the type of data to be modified and the new data value. The array continues while the **rh.recType** field of the TimeModifierAtom record is equal to RT\_TimeModifier.

### TimeNodeAtom

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the attributes of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

Let the *corresponding time node* be specified by the **ExtTimeNodeContainer** record (section 2.8.15) or the SubEffectContainer record that contains this **TimeNodeAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| restart | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fill | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved3 | | | | | | | | unused | | | | | | | | | | | | | | | | | | | | | | | |
| duration | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | reserved5 | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeNode](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000020. |

**reserved1 (4 bytes):** MUST be zero, and MUST be ignored.

**restart (4 bytes):** An **unsigned integer** that specifies how the *corresponding time node* restarts when it completes its action. It MUST be ignored if **fRestartProperty** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Does not restart. |
| 0x00000001 | Can restart at any time. |
| 0x00000002 | Can restart when the *corresponding time node* is not active. |
| 0x00000003 | Same as 0x00000000. |

**type (4 bytes):** A [**TimeNodeTypeEnum**](#Section_8b2c01817e764bc79372285dcb67ae6f) enumeration that specifies the type of the *corresponding time node*. It MUST be ignored if **fGroupingTypeProperty** is **FALSE** and a value of TL\_TNT\_Parallel MUST be used instead.

**fill (4 bytes):** An **unsigned integer** that specifies the state of the target object's properties when the animation ends. It MUST be ignored if **fFillProperty** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | The properties remain at their ending values while the parent time node is still running or holding. After which, the properties reset to their original values. |
| 0x00000001 | The properties reset to their original values after the time node becomes inactive. |
| 0x00000002 | The properties remain at their ending values while the parent time node is still running or holding, or until another sibling time node is started under a sequential time node as specified in the **type** field. After which, the properties reset to their original values. |
| 0x00000003 | Same as 0x00000000. |
| 0x00000004 | Same as 0x00000001. |

**reserved2 (4 bytes):**  MUST be zero, and MUST be ignored.

**reserved3 (1 byte):**  MUST be zero, and MUST be ignored.

**unused (3 bytes):** Undefined and MUST be ignored.

**duration (4 bytes):** A signed integer that specifies the duration of the *corresponding time node* in milliseconds. It MUST be ignored if **fDurationProperty** is **FALSE** and a value of 0x00000000 MUST be used instead.

**A - fFillProperty (1 bit):** A bit that specifies whether **fill** was explicitly set by a user interface action.

**B - fRestartProperty (1 bit):** A bit that specifies whether **restart** was explicitly set by a user interface action.

**C - reserved4 (1 bit):** MUST be zero, and MUST be ignored.

**D - fGroupingTypeProperty (1 bit):** A bit that specifies whether **type** was explicitly set by a user interface action.

**E - fDurationProperty (1 bit):** A bit that specifies whether **duration** was explicitly set by a user interface action.

**reserved5 (27 bits):** MUST be zero, and MUST be ignored.

### TimePropertyList4TimeNodeContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of attributes for a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

Let the *corresponding time node* be specified by the **ExtTimeNodeContainer** record (section 2.8.15) or the **SubEffectContainer** record (section 2.8.16) that contains this **TimePropertyList4TimeNodeContainer** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTimeVariant (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_TimePropertyList](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgTimeVariant (variable):** An array of [TimeVariant4TimeNode](#Section_1cbe764818fe4205b2c738163c85daf7) records that specifies the list of attributes for the *corresponding time node*. The size, in bytes, of the array is specified by **rh.recLen**. Each [**TimePropertyID4TimeNode**](#Section_582b9812deec41e3a3674016878ca98c) enumeration value MUST NOT occur more than once as a value of the **rh.recInstance** field in the array.

If the TL\_TPID\_AfterEffect value does not occur, a [TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) record in which the **boolValue** field is set to 0x00 SHOULD be used.

If the TL\_TPID\_Display value does not occur, a [TimeDisplayType](#Section_4ce3979934b1456a9a21dc5dda7c0d21) record in which the **displayType** field is set to 0x00000000 SHOULD be used.

If the *corresponding time node* is an **ExtTimeNodeContainer** record (section 2.8.15), the following values MUST NOT occur: TL\_TPID\_MasterPos and [TimeSubType](#Section_ac877ddb3911491f8026d11051aa0b63).

If the *corresponding time node* is a **SubEffectContainer** record, the following values MUST NOT occur: TL\_TPID\_EffectID, TL\_TPID\_EffectDir, TL\_TPID\_EffectType, TL\_TPID\_SlideCount, TL\_TPID\_TimeFilter, TL\_TPID\_EventFilter, TL\_TPID\_HideWhenStopped, TL\_TPID\_GroupID, TL\_TPID\_EffectNodeType, and TL\_TPID\_ZoomToFullScreen.

### TimeVariant4TimeNode

*Referenced by:* [*TimePropertyList4TimeNodeContainer*](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)

A variable type record that specifies an attribute of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) and whose type and meaning are specified by the value of the **rh.recInstance** field, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [TL\_TPID\_Display](#Section_582b9812deec41e3a3674016878ca98c) | A [TimeDisplayType](#Section_4ce3979934b1456a9a21dc5dda7c0d21) record that specifies the visibility of the time node in the user interface. |
| TL\_TPID\_MasterPos | A [TimeMasterRelType](#Section_a55a946ac8df4659a2934fe3370e4706) record that specifies the relationship of a subordinate time node to its master time node. |
| TL\_TPID\_SubType | A [TimeSubType](#Section_ac877ddb3911491f8026d11051aa0b63) record that specifies the type of subordinate time node. |
| TL\_TPID\_EffectID | A [TimeEffectID](#Section_35c58b5655324d778c3353a82efb5a89) record that specifies an identifier of an animation effect. |
| TL\_TPID\_EffectDir | A [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) record that specifies the direction or other attributes of an animation effect. The values for each animation effect are specified in the TimeEffectID record. |
| TL\_TPID\_EffectType | A [TimeEffectType](#Section_989fce31f9b845a8a358361ca53d7a3d) record that specifies the type of animation effect. |
| TL\_TPID\_AfterEffect | A [TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) record that specifies whether the time node is an after effect. |
| TL\_TPID\_SlideCount | A TimeVariantInt record that specifies the number of slides that a media will play across. |
| TL\_TPID\_TimeFilter | A [TimeNodeTimeFilter](#Section_41a5d8b9c0014fecaf559903e8a7a482) record that specifies a time filter that transforms a given time to the local time of a time node. |
| TL\_TPID\_EventFilter | A [TimeEventFilter](#Section_a4433ce8d99e43a6999c1387161c610d) structure that specifies an event filter for a time node. |
| TL\_TPID\_HideWhenStopped | A TimeVariantBool structure that specifies whether to display the media when it is stopped. |
| TL\_TPID\_GroupID | A [TimeGroupID](#Section_da6bcd4790ea44a692a0aeca9c2864e4) structure that specifies a reference to a [**build identifier**](#gt_0748643f-8a66-42ea-959a-3acd533eedc5) of an animation effect. |
| TL\_TPID\_EffectNodeType | A [TimeEffectNodeType](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) structure that specifies the role of a time node in the timing structure. |
| TL\_TPID\_PlaceholderNode | A TimeVariantBool structure that specifies whether the time node is a placeholder node that is not played during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). |
| TL\_TPID\_MediaVolume | A [TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c) structure that specifies the volume of a media. The **floatValue** sub-field MUST be greater than or equal to 0 and less than or equal to 100000. |
| TL\_TPID\_MediaMute | A TimeVariantBool structure that specifies whether a media is muted. |
| TL\_TPID\_ZoomToFullScreen | A TimeVariantBool structure that specifies whether to zoom a media to full screen when it plays. |

### TimeDisplayType

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies whether a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) is visible in the user interface.

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeDisplayType** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | displayType | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**displayType (4 bytes):** A signed integer that specifies whether the *corresponding time node* is displayed in the user interface. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | The *corresponding time node* is visible. |
| 0x00000001 | The *corresponding time node* is hidden. |

### TimeMasterRelType

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies how a subordinate [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) plays back relative to its master time node.

Let the *corresponding subordinate time node* be specified by the **SubEffectContainer** record (section [2.8.16](#Section_8f1586ac86864bda9ba58cc43ba91642)) that contains this **TimeMasterRelType** record.

Let the *corresponding master time node* be specified by the **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) that contains the *corresponding subordinate time node*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | masterRel | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**masterRel (4 bytes):** A **signed integer** that specifies how the *corresponding subordinate time node* plays back relative to the *corresponding master time node*. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Do not start the *corresponding subordinate time node*. |
| 0x00000002 | Start the *corresponding subordinate time node* when the *corresponding master time node* starts. |

### TimeSubType

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the type of subordinate [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

Let the *corresponding subordinate time node* be specified by the **SubEffectContainer** record (section [2.8.16](#Section_8f1586ac86864bda9ba58cc43ba91642)) that contains this **TimeSubType** record.

Let the *corresponding master time node* be specified by the **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) that contains the *corresponding subordinate time node*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | subType | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**subType (4 bytes):** A signed integer that specifies the type of the *corresponding subordinate time node*. It MUST be 0x00000001, specifying that the corresponding *subordinate time node* position is relative to the *corresponding master time nod*e.

### TimeEffectID

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the identifier of an animation effect.

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeEffectID** record.

Let the *corresponding effect type* be specified by the [TimeEffectType](#Section_989fce31f9b845a8a358361ca53d7a3d) record contained in the **TimePropertyList4TimeNodeContainer** record that contains this **TimeEffectID** record.

Let the *corresponding effect direction* be specified by the **intValue** field of the [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) record contained in the **TimePropertyList4TimeNodeContainer** record such that the **rh.recInstance** field of the TimeVariantInt record is equal to [TL\_TPID\_EffectDir](#Section_582b9812deec41e3a3674016878ca98c).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | effectID | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**effectID (4 bytes):** A signed integer that specifies the identifier of the animation effect of the *corresponding time node*. When the *corresponding effect type* is an entrance or an exit effect, this field MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Custom.  The *corresponding effect direction* MUST be ignored. |
| 0x00000001 | Appear.  The *corresponding effect direction* MUST be ignored. |
| 0x00000002 | Fly in.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000002: Right * 0x00000008: Left * 0x00000001: Top * 0x00000004: Bottom * 0x00000009: Top left * 0x00000003: Top right * 0x00000006: Bottom right * 0x0000000C: Bottom left |
| 0x00000003 | Blinds.  The *corresponding effect direction* MUST be one of the following values:   * 0x0000000A: Horizontal * 0x00000005: Vertical |
| 0x00000004 | Box.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000010: In * 0x00000020: Out |
| 0x00000005 | Check board.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000005: Vertical * 0x0000000A: Across |
| 0x00000006 | Circle.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000010: In * 0x00000020: Out |
| 0x00000007 | Crawl.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000002: Right * 0x00000008: Left * 0x00000001: Top * 0x00000004: Bottom * 0x00000009: Top left * 0x00000003: Top right * 0x00000006: Bottom right * 0x0000000C: Bottom left |
| 0x00000008 | Diamond.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000010: In * 0x00000020: Out |
| 0x00000009 | Dissolve.  The *corresponding effect direction* MUST be ignored. |
| 0x0000000A | Fade.  The *corresponding effect direction* MUST be ignored. |
| 0x0000000B | Flash once.  The *corresponding effect direction* MUST be ignored. |
| 0x0000000C | Peek.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000002: Right * 0x00000008: Left * 0x00000001: Top * 0x00000004: Bottom |
| 0x0000000D | Plus.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000010: In * 0x00000020: Out |
| 0x0000000E | Random bars.  The *corresponding effect direction* MUST be one of the following values:   * 0x0000000A: Horizontal * 0x00000005: Vertical |
| 0x0000000F | Spiral.  The *corresponding effect direction* MUST be ignored. |
| 0x00000010 | Split.  The *corresponding effect direction* MUST be one of the following values:   * 0x0000001A: Horizontal in * 0x0000002A: Horizontal out * 0x00000015: Vertical in * 0x00000025: Vertical out |
| 0x00000011 | Stretch.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000002: Right * 0x00000008: Left * 0x00000001: Top * 0x00000004: Bottom * 0x0000000A: Across |
| 0x00000012 | Strips.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000009: Up left * 0x00000003: Up right * 0x00000006: Down right * 0x0000000C: Down left |
| 0x00000013 | Swivel.  The *corresponding effect direction* MUST be one of the following values:   * 0x0000000A: Horizontal * 0x00000005: Vertical |
| 0x00000014 | Wedge.  The *corresponding effect direction* MUST be ignored. |
| 0x00000015 | Wheel.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000001: Wheel(1) * 0x00000002: Wheel(2) * 0x00000003: Wheel(3) * 0x00000004: Wheel(4) * 0x00000008: Wheel(8) |
| 0x00000016 | Wipe.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000001: Up * 0x00000002: Right * 0x00000004: Down * 0x00000008: Left |
| 0x00000017 | Zoom.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000010: In * 0x00000020: Out * 0x00000210: In center * 0x00000024: Out bottom * 0x00000120: Out slightly * 0x00000110: In slightly |
| 0x00000018 | Random effects.  The *corresponding effect direction* MUST be ignored. |
| 0x00000019 | Boomerang.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001A | Bounce.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001B | Color reveal.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001C | Credits.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001D | Ease in.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001E | Float.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001F | Grow and turn.  The *corresponding effect direction* MUST be ignored. |
| 0x00000020 | Reserved. |
| 0x00000021 | Reserved. |
| 0x00000022 | Light speed.  The *corresponding effect direction* MUST be ignored. |
| 0x00000023 | Pin wheel.  The *corresponding effect direction* MUST be ignored. |
| 0x00000024 | Reserved. |
| 0x00000025 | Rise up.  The *corresponding effect direction* MUST be ignored. |
| 0x00000026 | Swish.  The *corresponding effect direction* MUST be ignored. |
| 0x00000027 | Thin line.  The *corresponding effect direction* MUST be ignored. |
| 0x00000028 | Unfold.  The *corresponding effect direction* MUST be ignored. |
| 0x00000029 | Whip.  The *corresponding effect direction* MUST be ignored. |
| 0x0000002A | Ascend.  The *corresponding effect direction* MUST be ignored. |
| 0x0000002B | Center revolve.  The *corresponding effect direction* MUST be ignored. |
| 0x0000002C | Reserved. |
| 0x0000002D | Faded swivel.  The *corresponding effect direction* MUST be ignored. |
| 0x0000002E | Reserved. |
| 0x0000002F | Descend.  The *corresponding effect direction* MUST be ignored. |
| 0x00000030 | Sling.  The *corresponding effect direction* MUST be ignored. |
| 0x00000031 | Spinner.  The *corresponding effect direction* MUST be ignored. |
| 0x00000032 | Compress.  The *corresponding effect direction* MUST be ignored. |
| 0x00000033 | Zip.  The *corresponding effect direction* MUST be ignored. |
| 0x00000034 | Arc up.  The *corresponding effect direction* MUST be ignored. |
| 0x00000035 | Faded zoom.  The *corresponding effect direction* MUST be ignored. |
| 0x00000036 | Glide.  The *corresponding effect direction* MUST be ignored. |
| 0x00000037 | Expand.  The *corresponding effect direction* MUST be ignored. |
| 0x00000038 | Flip.  The *corresponding effect direction* MUST be ignored. |
| 0x00000039 | Reserved. |
| 0x0000003A | Fold.  The *corresponding effect direction* MUST be ignored. |

When the *corresponding effect type* is an emphasis effect, this field MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Custom.  The *corresponding effect direction* MUST be ignored. |
| 0x00000001 | Change fill color.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000001: Instant * 0x00000002: Gradual * 0x00000006: Gradual and cycle clockwise * 0x0000000A: Gradual and cycle counterclockwise |
| 0x00000002 | Change font.  The *corresponding effect direction* MUST be ignored. |
| 0x00000003 | Change font color.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000001: Instant * 0x00000001: Gradual * 0x00000006: Gradual and cycle clockwise * 0x0000000A: Gradual and cycle counterclockwise |
| 0x00000004 | Change font size.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000001: Instant * 0x00000002: Gradual |
| 0x00000005 | Change font style.  The *corresponding effect direction* MUST be a value of any combination of the following values:   * 0x00000001: Font bold * 0x00000002: Font italic * 0x00000004: Font underline |
| 0x00000006 | Grow and shrink.  The *corresponding effect direction* MUST be ignored. |
| 0x00000007 | Change line color.  The *corresponding effect direction* MUST be one of the following values:   * 0x00000001: Instant * 0x00000002: Gradual * 0x00000006: Gradual and cycle clockwise * 0x0000000A: Gradual and cycle counterclockwise |
| 0x00000008 | Spin.  The *corresponding effect direction* MUST be ignored. |
| 0x00000009 | Transparency.  The *corresponding effect direction* MUST be ignored. |
| 0x0000000A | Bold flash.  The *corresponding effect direction* MUST be ignored. |
| 0x0000000B | Reserved. |
| 0x0000000C | Reserved. |
| 0x0000000D | Reserved. |
| 0x0000000E | Blast.  The *corresponding effect direction* MUST be ignored. |
| 0x0000000F | Bold reveal.  The *corresponding effect direction* MUST be ignored. |
| 0x00000010 | Brush on color.  The *corresponding effect direction* MUST be ignored. |
| 0x00000011 | Reserved. |
| 0x00000012 | Brush on underline.  The *corresponding effect direction* MUST be ignored. |
| 0x00000013 | Color blend.  The *corresponding effect direction* MUST be ignored. |
| 0x00000014 | Color wave.  The *corresponding effect direction* MUST be ignored. |
| 0x00000015 | Complementary color.  The *corresponding effect direction* MUST be ignored. |
| 0x00000016 | Complementary color 2.  The *corresponding effect direction* MUST be ignored. |
| 0x00000017 | Contrasting color.  The *corresponding effect direction* MUST be ignored. |
| 0x00000018 | Darken.  The *corresponding effect direction* MUST be ignored. |
| 0x00000019 | Desaturate.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001A | Flash bulb.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001B | Flicker.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001C | Grow with color.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001D | Reserved. |
| 0x0000001E | Lighten.  The *corresponding effect direction* MUST be ignored. |
| 0x0000001F | Style emphasis.  The *corresponding effect direction* MUST be ignored. |
| 0x00000020 | Teeter.  The *corresponding effect direction* MUST be ignored. |
| 0x00000021 | Vertical grow.  The *corresponding effect direction* MUST be ignored. |
| 0x00000022 | Wave.  The *corresponding effect direction* MUST be ignored. |
| 0x00000023 | Blink.  The *corresponding effect direction* MUST be ignored. |
| 0x00000024 | Shimmer.  The *corresponding effect direction* MUST be ignored. |

When the *corresponding effect type* is a motion path effect, the *corresponding effect direction* MUST be ignored and this field MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Custom. |
| 0x00000001 | Circle. |
| 0x00000002 | Right triangle. |
| 0x00000003 | Diamond. |
| 0x00000004 | Hexagon. |
| 0x00000005 | 5-point star. |
| 0x00000006 | Crescent moon. |
| 0x00000007 | Square. |
| 0x00000008 | Trapezoid. |
| 0x00000009 | Heart. |
| 0x0000000A | Octagon. |
| 0x0000000B | 6-point star. |
| 0x0000000C | Football. |
| 0x0000000D | Equal triangle. |
| 0x0000000E | Parallelogram. |
| 0x0000000F | Pentagon. |
| 0x00000010 | 4-point star. |
| 0x00000011 | 8-point star. |
| 0x00000012 | Teardrop. |
| 0x00000013 | Pointy star. |
| 0x00000014 | Curved square. |
| 0x00000015 | Curved X. |
| 0x00000016 | Vertical figure 8. |
| 0x00000017 | Curvy star. |
| 0x00000018 | Loop de loop. |
| 0x00000019 | Buzz saw. |
| 0x0000001A | Horizontal figure 8. |
| 0x0000001B | Peanut. |
| 0x0000001C | Figure 8 four. |
| 0x0000001D | Neutron. |
| 0x0000001E | Swoosh. |
| 0x0000001F | Bean. |
| 0x00000020 | Plus. |
| 0x00000021 | Inverted triangle. |
| 0x00000022 | Inverted square. |
| 0x00000023 | Left. |
| 0x00000024 | Turn right. |
| 0x00000025 | Arc down. |
| 0x00000026 | Zigzag. |
| 0x00000027 | S curve 2. |
| 0x00000028 | Sine wave. |
| 0x00000029 | Bounce left. |
| 0x0000002A | Down. |
| 0x0000002B | Turn up. |
| 0x0000002C | Arc up. |
| 0x0000002D | Heartbeat. |
| 0x0000002E | Spiral right. |
| 0x0000002F | Wave. |
| 0x00000030 | Curvy left. |
| 0x00000031 | Diagonal down right. |
| 0x00000032 | Turn down. |
| 0x00000033 | Arc left. |
| 0x00000034 | Funnel. |
| 0x00000035 | Spring. |
| 0x00000036 | Bounce right. |
| 0x00000037 | Spiral left. |
| 0x00000038 | Diagonal up right. |
| 0x00000039 | Turn up right. |
| 0x0000003A | Arc right. |
| 0x0000003B | S curve 1. |
| 0x0000003C | Decaying wave. |
| 0x0000003D | Curvy right. |
| 0x0000003E | Stairs down. |
| 0x0000003F | Right. |
| 0x00000040 | Up. |

When the *corresponding effect type* is a media effect, the *corresponding effect direction* MUST be ignored and this field MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Custom. |
| 0x00000001 | Play. |
| 0x00000002 | Pause. |
| 0x00000003 | Stop. |

### TimeEffectType

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the type of animation effect.

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeEffectType** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | effectType | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**effectType (4 bytes):** A **signed integer** that specifies the type of animation effect of the *corresponding time node*. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000001 | Entrance. |
| 0x00000002 | Exit. |
| 0x00000003 | Emphasis. |
| 0x00000004 | Motion path. |
| 0x00000005 | Action verb. |
| 0x00000006 | Media command. |

### TimeNodeTimeFilter

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a time filter that transforms a given time to the local time of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeNodeTimeFilter** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | timeFilter (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be an odd number. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_String.

**timeFilter (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the time filter that transforms a given time value into the local time of the *corresponding time node*. It MUST be a valid TIMESEQUENCE as specified in the following ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:

1. TIMESEQUENCE = TIME "," TRANSTIME \*(";" TIMESEQUENCE)
2. TIME = "0" "." 1\*DIGIT / "1" "." "0"
3. TRANSTIME = "0" "." 1\*DIGIT / "1" "." "0"

Each TIME is the normalized local time for the time node whose value ranges from 0.0 to 1.0, and TRANSTIME is the transformed local time for the time node. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 1

### TimeEventFilter

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies an event filter for a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeEventFilter** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | timeEventFilter (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be an odd number. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_String.

**timeEventFilter (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the event filter for the *corresponding time node*. It MUST be "cancelBubble" and the **TimePropertyList4TimeNodeContainer** record that contains this **TimeEventFilter** record MUST contain a [TimeEffectNodeType](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) record with **effectNodeType** equal to 0x000000005. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 1

### TimeGroupID

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to a [**build identifier**](#gt_0748643f-8a66-42ea-959a-3acd533eedc5) of an animation effect.

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeGroupID** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | groupID | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**groupID (4 bytes):**  A **signed integer** that specifies a reference to a build identifier of the animation as specified in the [BuildAtom](#Section_baa3c302b96c4f0b851708c50c38952b) record. There is a **shapeIdRef** field specified in either the [VisualShapeChartElementAtom](#Section_660780f345414850bae696b8ffa7d645) record or the [VisualShapeGeneralAtom](#Section_e3f4be5088fd43fdb68f82f2743e92ea) record; it is used with this field to form a unique pair for the animation effect that will be applied to the specified object.

### TimeEffectNodeType

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the role of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) in the timing structure.

Let the *corresponding time node* be as specified in the **TimePropertyList4TimeNodeContainer** record (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) that contains this **TimeEffectNodeType** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | effectNodeType | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**effectNodeType (4 bytes):** A **signed integer** that specifies the role of the *corresponding time node*. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000001 | Click effect node. |
| 0x00000002 | With previous node. |
| 0x00000003 | After previous node. |
| 0x00000004 | Main sequence node. |
| 0x00000005 | Interactive sequence node. |
| 0x00000006 | Click parallel node. |
| 0x00000007 | With group node. |
| 0x00000008 | After group node. |
| 0x00000009 | Timing root node. |

### TimeAnimateBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a generic animation behavior. This animation behavior is applied to the object specified by the **behavior.clientVisualElement** field and used to animate one property specified by the **behavior.stringList** field. The property MUST be one from the list that is specified in the **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| animateBehaviorAtom (20 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| animateValueList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varBy (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varFrom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varTo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeAnimateBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**animateBehaviorAtom (20 bytes):** A [TimeAnimateBehaviorAtom](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe) record that specifies the value type of the animated property as specified in the **behavior.stringList** field, how to interpolate the value, and which attributes of this field and this **TimeAnimateBehaviorContainer** record are valid.

**animateValueList (variable):** An optional **TimeAnimationValueListContainer** record (section [2.8.31](#Section_9177feba1a8140b8950dd1de63ae8ee7)) that specifies the list of key points that consists of a time and the value at that time. The **animateBehaviorAtom.calcMode** field specifies how to calculate interpolated values between these key points. It MUST be ignored if **animateBehaviorAtom.fAnimationValuesPropertyUsed** is **FALSE**.

**varBy (variable):** An optional [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies the offset value of the animated property. The sub-field **varBy.rh.recInstance** MUST be 0x001. It MUST be in a format dictated by the value of **animateBehaviorAtom.valueType** as specified in the following table.

| Value | Meaning |
| --- | --- |
| TL\_TABVT\_String | An arbitrary Unicode string. |
| TL\_TABVT\_Number | A preset string value as specified in the **varTo** field of the **TimeSetBehaviorContainer** record (section [2.8.69](#Section_5428095fe4c443d0ad36b8b240e1338b)); or a string that specifies a real number, whose format is specified by the **varTo** field of the **TimeSetBehaviorContainer** record. |
| TL\_TABVT\_Color | A string that specifies a color value, whose format is specified by the **varTo** field of the **TimeSetBehaviorContainer** record. |

MUST be ignored if **varTo** exists. It MUST be ignored if **animateValueList** exists. It MUST be ignored if **animateBehaviorAtom.fByPropertyUsed** is **FALSE**.

**varFrom (variable):** An optional TimeVariantString record that specifies the starting value of the animated property. The sub-field **varFrom.rh.recInstance** MUST be 0x002. It MUST be in a format dictated by the value of **animateBehaviorAtom.valueType** as specified in the following table.

| Value | Meaning |
| --- | --- |
| TL\_TABVT\_String | An arbitrary Unicode string. |
| TL\_TABVT\_Number | A preset string value as specified in the **varTo** field of the **TimeSetBehaviorContainer** record; or a string that specifies a real number, whose format is specified by the **varTo** field of the **TimeSetBehaviorContainer** record. |
| TL\_TABVT\_Color | A string that specifies a color value, whose format is specified by the **varTo** field of the **TimeSetBehaviorContainer** record. |

If **varFrom** exists, **varTo** or **varBy** MUST also exist. It MUST be ignored if **animateValueList** exists. It MUST be ignored if **animateBehaviorAtom.fFromPropertyUsed** is **FALSE**.

**varTo (variable):** An optional TimeVariantString record that specifies the end value of the animated property. The sub-field **varTo.rh.recInstance** MUST be 0x003. It MUST be in a format dictated by the value of **animateBehaviorAtom.valueType** as specified in the following table.

| Value | Meaning |
| --- | --- |
| TL\_TABVT\_String | An arbitrary Unicode string. |
| TL\_TABVT\_Number | A preset string value as specified in the **varTo** field of the **TimeSetBehaviorContainer** record; or a string that specifies a real number, whose format is specified by the **varTo** field of the **TimeSetBehaviorContainer** record. |
| TL\_TABVT\_Color | A string that specifies a color value, whose format is specified by the **varTo** field of the **TimeSetBehaviorContainer** record. |

MUST be ignored if **animateValueList** exists. It MUST be ignored if **animateBehaviorAtom.fToPropertyUsed** is **FALSE**.

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common animation behavior information.

### TimeAnimateBehaviorAtom

*Referenced by:* [*TimeAnimateBehaviorContainer*](#Section_bc65cd1c14a74c0dbc2d192bab64a713)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information of a generic animation that can animate any property.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| calcMode | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | reserved | | | | | | | | | | | | | | | | | | | | | | | | | |
| valueType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeAnimateBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x0000000C. |

**calcMode (4 bytes):** An **unsigned integer** that specifies how the property value is calculated. It MUST be ignored if **fCalcModePropertyUsed** is **FALSE** and a value of 0x00000001 MUST be used instead. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Discrete mode, which specifies that the value will jump from one to another without any interpolation. |
| 0x00000001 | Linear mode, which specifies that the values are linearly interpolated. |
| 0x00000002 | Formula mode, which specifies that a formula specified by the **animateValueList** field of the **TimeAnimateBehaviorContainer** record (section 2.8.29) that contains this **TimeAnimateBehaviorAtom** record is used in the interpolation. |

**A - fByPropertyUsed (1 bit):** A bit that specifies whether the **varBy** field of the **TimeAnimateBehaviorContainer** record (section 2.8.29) that contains this **TimeAnimateBehaviorAtom** record is valid.

**B - fFromPropertyUsed (1 bit):** A bit that specifies whether the **varFrom** field of the **TimeAnimateBehaviorContainer** record (section 2.8.29) that contains this **TimeAnimateBehaviorAtom** record is valid.

**C - fToPropertyUsed (1 bit):** A bit that specifies whether the **varTo** field of the **TimeAnimateBehaviorContainer** record (section 2.8.29) that contains this **TimeAnimateBehaviorAtom** record is valid.

**D - fCalcModePropertyUsed (1 bit):** A bit that specifies whether **calcMode** was explicitly set by a user interface action.

**E - fAnimationValuesPropertyUsed (1 bit):** A bit that specifies whether the **animateValueList** field of the **TimeAnimateBehaviorContainer** record (section 2.8.29) that contains this **TimeAnimateBehaviorAtom** record is valid.

**F - fValueTypePropertyUsed (1 bit):** A bit that specifies whether **valueType** was explicitly set by a user interface action.

**reserved (26 bits):** MUST be zero, and MUST be ignored.

**valueType (4 bytes):** A [**TimeAnimateBehaviorValueTypeEnum**](#Section_2817d0100a0347dd82993610e25a4645) enumeration that specifies the value type of the property to be animated. It MUST be ignored if **fValueTypePropertyUsed** is **FALSE** and a value of TL\_TABVT\_Number MUST be used instead.

### TimeAnimationValueListContainer

*Referenced by:* [*TimeAnimateBehaviorContainer*](#Section_bc65cd1c14a74c0dbc2d192bab64a713)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the list of key points that are used during a property animation to set a property to a value at a point within the timeline as specified in the **TimeAnimateBehaviorContainer** record (section 2.8.29).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTimeAnimValueList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeAnimationValueList](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgTimeAnimValueList (variable):** An array of [TimeAnimationValueListEntry](#Section_be583d6811d743c2a3008ef2ffac7841) structures that specifies the key points that are used during the animation. The length, in bytes, of the array is specified by **rh.recLen**.

If the value of the **timeAnimationValueAtom.time** field in any TimeAnimationValueListEntry record in this array is -1000, the time for the key points is evenly partitioned between 0 and 1.

### TimeAnimationValueListEntry

*Referenced by:* [*TimeAnimationValueListContainer*](#Section_9177feba1a8140b8950dd1de63ae8ee7)

A structure that specifies a key point in a property animation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| timeAnimationValueAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varValue (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varFormula (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**timeAnimationValueAtom (12 bytes):** A [TimeAnimationValueAtom](#Section_65496e4f4e9743beb68e4f1355f41aa3) record that specifies the time, as a percentage of the animation time, at which the property takes on the value specified by the **varValue** and **varFormula** fields.

**varValue (variable):** An optional [TimeVariant](#Section_8080ab7d824644d882c5a20d1b92dc6c) record that specifies a value that corresponds to the time as specified in the **timeAnimationValueAtom.time** field. The sub-field **varValue.rh.recInstance** MUST be 0x000. If the **varFormula** field exists, the property takes on the value specified by the formula; otherwise, the property takes on this value.

**varFormula (variable):** An optional [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies a formula to be used to specify a complex animation for an object. The sub-field **varFormula.rh.recInstance** MUST be 0x001.

The formula manipulates a property value of the object, over a specified period of time. Each formula has zero or more inputs specified by the ($) symbol, zero or more variables specified by the (#) symbol, and a target variable. In each instance, the special symbols are pre-pended to the variable name. The target variable is specified by the **behavior.stringList.rgChildRec** field of the **TimeAnimateBehaviorContainer** record (section [2.8.29](#Section_bc65cd1c14a74c0dbc2d192bab64a713)) that also contains the **TimeAnimationValueListContainer** record (section 2.8.31) that contains this **TimeAnimationValueListEntry** record. The formula can contain one or more of any of the following constants, operators or functions. In addition, the formula can also contain [**floating-point numbers**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) and parentheses.

The **varFormula.stringValue** MUST be a valid FORMULA as specified in the following ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:

1. FORMULA = TERM \*(( "+" / "-" ) TERM)
2. TERM = POWER \*(( "\*" / "/" / "%" ) POWER)
3. POWER = UNARY \*("^" UNARY)
4. UNARY = ["+" / "-"] FACTOR
5. FACTOR = VARIABLE / CONSTANT / FUNCTION / PARENS
6. PARENS = "(" FORMULA ")"CHAR = "." / "\_" / ALPHA / DIGIT
7. NUMBER = 1\*DIGIT
8. EXPONENT = ( "e" / "E" ) ["-"] NUMBER
9. VALUE = NUMBER ["." NUMBER] [EXPONENT]
10. VARIABLE = "$" / ATTRIBUTE
11. ATTRIBUTE = ["#"] ATTRNAME
12. ATTRNAME = OFFICEART\_CLIENT\_ATTRNAME / OFFICEART\_FOPT\_ATTRNAME
13. OFFICEART\_CLIENT\_ATTRNAME = "ppt\_x" / "ppt\_y" / "ppt\_w" / "ppt\_h" / "ScaleX" / "ScaleY"
14. OFFICEART\_FOPT\_ATTRNAME = "stype.rotation" / "style.opacity" / "style.visibility" / "ppt\_r" / "r" / "style.fontSize" / "style.fontWeight" / "style.fontStyle" / "style.fontFamily" / "style.textEffectEmboss" / "style.textShadow" / "style.textTransform" / "style.textDecorationUnderline" / "style.textEffectOutline" / "style.textDecorationLineThrough" / "style.sRotation" / "imageData.cropTop" / "imageData.cropBottom" / "imageData.cropLeft" / "imageData.cropRight" / "imageData.gain" / "imageData.blackleve" / "imageData.gamma" / "imageData.grayscale" / "fill.on" / "fill.type" / "fill.opacity" / "fill.method" / "fill.opacity2" / "fill.angle" / "fill.focus" / "fill.focusposition.x" / "fill.focusposition.y" / "fill.focussize.x" / "fill.focussize.y" / "stroke.on" / "stroke.weight" / "stroke.opacity" / "stroke.linestyle" / "stroke.dashstyle" / "stroke.filltype" / "stroke.imagesize.x" / "stroke.imagesize.y" / "stroke.startArrow" / "stroke.endArrow" / "stroke.startArrowWidth" / "stroke.startArrowLength" / "stroke.endArrowWidth" / "stroke.endArrowLength" / "shadow.on" / "shadow.type" / "shadow.opacity" / "shadow.offset.x" / "shadow.offset.y" / "shadow.offset2.x" / "shadow.offset2.y" / "shadow.origin.x" / "shadow.origin.y" / "shadow.matrix.xtox" / "shadow.matrix.ytox" / "shadow.matrix.xtox" / "shadow.matrix.ytoy" / "shadow.matrix.perspectiveX" / "shadow.matrix.perspectiveY" / "skew.on" / "skew.offset.x" / "skew.offset.y" / "skew.origin.x" / "skew.origin.y" / "skew.matrix.xtox" / "skew.matrix.ytox" / "skew.matrix.xtox" / "skew.matrix.ytoy" / "skew.matrix.perspectiveX" / "skew.matrix.perspectiveY" / "extrusion.on" / "extrusion.type" / "extrusion.render" / "extrusion.viewpointorigin.x" / "extrusion.viewpointorigin.y" / "extrusion.viewpoint.x" / "extrusion.viewpoint.y" / "extrusion.viewpoint.z" / "extrusion.plane" / "extrusion.skewangle" / "extrusion.skewamt" / "extrusion.backdepth" / "extrusion.foredepth" / "extrusion.orientation.x" / "extrusion.orientation.y" / "extrusion.orientation.z" / "extrusion.orientationangle" / "extrusion.rotationangle.x" / "extrusion.rotationangle.y" / "extrusion.lockrotationcenter" / "extrusion.autorotationcenter" / "extrusion.rotationcenter.x" / "extrusion.rotationcenter.y" / "extrusion.rotationcenter.z" / "extrusion.colormode"
15. CONSTANT = VALUE / "pi" / "e"
16. IDENT = "abs" / "acos" / "asin" / "atan" / "ceil" / "cos" / "cosh" / "deg" / "exp" / "floor" / "ln" / "max" / "min" / "rad" / "rand" / "sin" / "sinh" / "sqrt" / "tan" / "tanh"
17. FUNCTION = IDENT "(" FORMULA ["," FORMULA] ")"

Components of the preceding formula are further specified as follows.

**Operator precedence**

Mathematical operations have the following order of precedence, listed from lowest to highest. Operators listed on the same line have equal precedence.

1. "+" (Addition), "-" (Subtraction)
2. "\*" (Multiplication), "/" (Division), "%" (Modulo)
3. "^" (Exponentiation)
4. "-" (Unary minus), "+" (Unary plus)
5. Variables, Constants (including numbers) and Functions

**Variables**

The symbol '$' represents the value of **varValue**.

**Attributes**

ATTRNAME MUST be one from the following two lists:

* OFFICEART\_CLIENT\_ATTRNAME specifies the list of attributes that are translated from the [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) record.
* OFFICEART\_FOPT\_ATTRNAME specifies the list of attributes that are translated from the OfficeArtFOPT record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.9).

**Constants**

| Name | Description |
| --- | --- |
| pi | Mathematical constant pi |
| e | Mathematical constant e |

**Operators**

| Name | Description | Usage |
| --- | --- | --- |
| + | Addition | "x+y", adds x to the value y |
| - | Subtraction | "x-y", subtracts y from the value x |
| \* | Multiplication | "x\*y", multiplies x by the value y |
| / | Division | "x/y", divides x by the value y |
| % | Modulus | "x%y", the remainder of x/y |
| ^ | Power | "x^y", x raised to the power y |

**Functions**

| Name | Description | Usage |
| --- | --- | --- |
| abs | Absolute value | "abs(x)", absolute value of x |
| acos | Arc Cosine | "acos(x)", arc cosine of the value x |
| asin | Arc Sine | "asin(x)", arc sine of the value x |
| atan | Arc Tangent | "atan(x)", arc tangent of the value x |
| ceil | Ceil value | "ceil(x)", value of x rounded up |
| cos | Cosine | "cos(x)", cosine of the value of x |
| cosh | Hyperbolic Cosine | "cosh(x)", hyperbolic cosine of the value x |
| deg | Radiant to Degree convert | "deg(x)", the degree value of radiant value x |
| exp | Exponent | "exp(x)", value of constant e raised to the power of x |
| floor | Floor value | "floor(x)", value of x rounded down |
| ln | Natural logarithm | "ln(x)", natural logarithm of x |
| max | Maximum of two values | "max(x,y)", returns x if (x > y) or returns y if (y > x) |
| min | Minimum of two values | "min(x,y)", returns x if (x < y) or returns y if (y < x) |
| rad | Degree to Radiant convert | "rad(x)", the radiant value of degree value x |
| rand | Random value | "rand(x)", returns a random floating point value between 0 and x |
| sin | Sine | "sin(x)", sine of the value x |
| sinh | Hyperbolic Sine | "sinh(x)", hyperbolic sine of the value x |
| sqrt | Square root | "sqrt(x)", square root of the value x |
| tan | Tangent | "tan(x)", tangent of the value x |
| tanh | Hyperbolic Tangent | "tanh(x)", hyperbolic tangent of the value x |

### TimeAnimationValueAtom

*Referenced by:* [*TimeAnimationValueListEntry*](#Section_be583d6811d743c2a3008ef2ffac7841)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a value of time that is used in the TimeAnimationValueListEntry structure to determine the overall timeline for the corresponding animation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| time | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeAnimationValue](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**time (4 bytes):** A **signed integer** that specifies a percentage value of time in 1000ths that is utilized in the TimeAnimationValueListEntry record. For example, 1000 means 100% of time of an animation. This field MUST be either equal to -1000, or greater than or equal to 0 and less than or equal to 1000.

### TimeBehaviorContainer

*Referenced by:* [*TimeAnimateBehaviorContainer*](#Section_bc65cd1c14a74c0dbc2d192bab64a713)*,* [*TimeColorBehaviorContainer*](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)*,* [*TimeCommandBehaviorContainer*](#Section_d188069b704c4f9d838898a7eb357f0f)*,* [*TimeEffectBehaviorContainer*](#Section_498a5d0f07254a06a7de7c67394e9146)*,* [*TimeMotionBehaviorContainer*](#Section_40b9860a04a54946ae4b51fdd1176cec)*,* [*TimeRotationBehaviorContainer*](#Section_2ef1f0c624534be7875ea1a7d7201580)*,* [*TimeScaleBehaviorContainer*](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a)*,* [*TimeSetBehaviorContainer*](#Section_5428095fe4c443d0ad36b8b240e1338b)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the common information of an animation behavior.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behaviorAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| stringList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| propertyList (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clientVisualElement (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_TimeBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**behaviorAtom (24 bytes):** A [TimeBehaviorAtom](#Section_9f996c4a3780415c9a6771d323788f95) record that specifies the type of transform used in the animation, how to compose animated values, and which attributes of this field and this **TimeBehaviorContainer** record are valid.

**stringList (variable):** An optional **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)) that specifies the list of the names of properties to be animated. It MUST be ignored if **behaviorAtom.fAttributeNamesPropertyUsed** is **FALSE**.

**propertyList (variable):** An optional [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) record that specifies a list of animation attributes that are used in the animation behavior.

**clientVisualElement (variable):** A **ClientVisualElementContainer** record (section [2.8.44](#Section_80b3266a1fe64140acef0483ac355c89)) that specifies the target object that is animated.

### TimeBehaviorAtom

*Referenced by:* [*TimeBehaviorContainer*](#Section_8d75cc5b6f804b2e980ba521e2691e54)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the common information of an animation behavior.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | reserved3 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behaviorAdditive | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behaviorAccumulate | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behaviorTransform | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000010. |

**A - fAdditivePropertyUsed (1 bit):** A bit that specifies whether the **behaviorAdditive** field was explicitly set by a user interface action.

**B - reserved1 (1 bit):** MUST be zero, and MUST be ignored.

**C - fAttributeNamesPropertyUsed (1 bit):** A bit that specifies whether the **stringList** field of the **TimeBehaviorContainer** record (section 2.8.34) that contains this TimeBehaviorAtom record is valid.

**D - reserved2 (1 bit):** MUST be zero, and MUST be ignored.

**reserved3 (28 bits):** MUST be zero, and MUST be ignored.

**behaviorAdditive (4 bytes):** An unsigned integer that specifies how to compose the animated value with the original value of the property that is animated. It MUST be ignored if **fAdditivePropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Override the original value with the animated value. |
| 0x00000001 | Add the animated value to the original value. |

**behaviorAccumulate (4 bytes):** An unsigned integer that specifies how to compose the animated values of the property in repeating animations. It MUST be 0x00000000 that specifies that no accumulation is used.

**behaviorTransform (4 bytes):** An unsigned integer that specifies the type of animation transform to use. It MUST be 0x00000000 that specifies that the animation animates properties of the target object.

### TimeStringListContainer

*Referenced by:* [*TimeBehaviorContainer*](#Section_8d75cc5b6f804b2e980ba521e2691e54)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of names of properties that are animated by an animation behavior.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_TimeVariantList](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgChildRec (variable):** An array of [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies the list of names. The length, in bytes, of the array is specified by **rh.recLen**. The property names SHOULD be from the following list of possible names:

ppt\_x, ppt\_y, ppt\_w, ppt\_h, ppt\_c, ppt\_r, xshear, yshear, image, ScaleX, ScaleY, r, fillcolor, style.opacity, style.rotation, style.visibility, style.color, style.fontSize, style.fontWeight, style.fontStyle, style.fontFamily, style.textEffectEmboss, style.textShadow, style.textTransform, style.textDecorationUnderline, style.textEffectOutline, style.textDecorationLineThrough, style.sRotation, imageData.cropTop, imageData.cropBottom, imageData.cropLeft, imageData.cropRight, imageData.gain, imageData.blacklevel, imageData.gamma, imageData.grayscale, imageData.chromakey, fill.on, fill.type, fill.color, fill.opacity, fill.color2, fill.method, fill.opacity2, fill.angle, fill.focus, fill.focusposition.x, fill.focusposition.y, fill.focussize.x, fill.focussize.y, stroke.on, stroke.color, stroke.weight, stroke.opacity, stroke.linestyle, stroke.dashstyle, stroke.filltype, stroke.src, stroke.color2, stroke.imagesize.x, stroke.imagesize.y, stroke.startArrow, stroke.endArrow, stroke.startArrowWidth, stroke.startArrowLength, stroke.endArrowWidth, stroke.endArrowLength, shadow.on, shadow.type, shadow.color, shadow.color2, shadow.opacity, shadow.offset.x, shadow.offset.y, shadow.offset2.x, shadow.offset2.y, shadow.origin.x, shadow.origin.y, shadow.matrix.xtox, shadow.matrix.ytox, shadow.matrix.xtox, shadow.matrix.ytoy, shadow.matrix.perspectiveX, shadow.matrix.perspectiveY, skew.on, skew.offset.x, skew.offset.y, skew.origin.x, skew.origin.y, skew.matrix.xtox, skew.matrix.ytox, skew.matrix.xtox, skew.matrix.ytoy, skew.matrix.perspectiveX, skew.matrix.perspectiveY, extrusion.on, extrusion.type, extrusion.render, extrusion.viewpointorigin.x, extrusion.viewpointorigin.y, extrusion.viewpoint.x, extrusion.viewpoint.y, extrusion.viewpoint.z, extrusion.plane, extrusion.skewangle, extrusion.skewamt, extrusion.backdepth, extrusion.foredepth, extrusion.orientation.x, extrusion.orientation.y, extrusion.orientation.z, extrusion.orientationangle, extrusion.color, extrusion.rotationangle.x, extrusion.rotationangle.y, extrusion.lockrotationcenter, extrusion.autorotationcenter, extrusion.rotationcenter.x, extrusion.rotationcenter.y, extrusion.rotationcenter.z, and extrusion.colormode

### TimePropertyList4TimeBehavior

*Referenced by:* [*TimeBehaviorContainer*](#Section_8d75cc5b6f804b2e980ba521e2691e54)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of animation attributes that is used in an animation behavior.

Let the *corresponding time node* be specified by the **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) or the **SubEffectContainer** record (section [2.8.16](#Section_8f1586ac86864bda9ba58cc43ba91642)) that contains this **TimePropertyList4TimeBehavior** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimePropertyList](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgChildRec (variable):** An array of [TimeVariant4Behavior](#Section_758f23158ef74f1d81da41ed4ab6683a) records that specifies the list of animation attributes. The length, in bytes, of the array is specified by **rh.recLen**. Each [**TimePropertyID4TimeBehavior**](#Section_5cb9da332a5e4738bd1c717db16bbcc6) enumeration value MUST NOT occur more than once as a value of the **rh.recInstance** field in the array.

If the TL\_TBPID\_MotionPathEditRelative value does not occur, a [TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) structure in which the **boolValue** field is 0x01 SHOULD be used.

If the TL\_TBPID\_PathEditRotationAngle value does not occur, a [TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c) structure in which the **floatValue** field is 0 SHOULD be used.

If the TL\_TBPID\_PathEditRotationX value does not occur, a TimeVariantFloat structure in which the **floatValue** field is 0 SHOULD be used.

If the TL\_TBPID\_PathEditRotationY value does not occur, a TimeVariantFloat structure in which the **floatValue** field is 0 SHOULD be used.

If the **colorBehaviorAtom.flags.fColorSpacePropertyUsed** field of the **TimeColorBehaviorContainer** record (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)) is **FALSE**, any item with the TL\_TBPID\_ColorColorModel value MUST be ignored and a [TimeColorModel](#Section_3c4894dddd604fde8e92a0d9bcd730ff) record with a **colorModel** field equal to 0x00000000 MUST be used instead.

If the **colorBehaviorAtom.flags.fDirectionPropertyUsed** field of the **TimeColorBehaviorContainer** record is **FALSE**, any item with the TL\_TBPID\_ColorDirection value MUST be ignored and a [TimeColorDirection](#Section_0299e331262745c59fe0541de33dcaa8) record with a **colorDirection** field equal to 0x00000000 MUST be used instead.

### TimeVariant4Behavior

*Referenced by:* [*TimePropertyList4TimeBehavior*](#Section_51c4cc592d584ac98b254abc1040780d)

A variable type record that specifies an attribute of an animation behavior and whose type and meaning are dictated by the value of the **rh.recInstance** field of any of these attributes, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [TL\_TBPID\_UnknownPropertyList](#Section_5cb9da332a5e4738bd1c717db16bbcc6) | A [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies unknown attributes. |
| TL\_TBPID\_RuntimeContext | A [TimeRuntimeContext](#Section_4c48cb5aae834962a0ac994008e08193) record that specifies which versions of the hosting applications can run this behavior. |
| TL\_TBPID\_MotionPathEditRelative | A [TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) record that specifies whether a motion path moves along with the object that it applies to during editing. This record is only used by the **TimeMotionBehaviorContainer** record (section [2.8.63](#Section_40b9860a04a54946ae4b51fdd1176cec)). |
| TL\_TBPID\_ColorColorModel | A [TimeColorModel](#Section_3c4894dddd604fde8e92a0d9bcd730ff) record that specifies the color model. This record is only used by the **TimeColorBehaviorContainer** record (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)). |
| TL\_TBPID\_ColorDirection | A [TimeColorDirection](#Section_0299e331262745c59fe0541de33dcaa8) record that specifies the interpolation direction in the [**HSL**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5). This record is only used by the **TimeColorBehaviorContainer** record. |
| TL\_TBPID\_Override | A [TimeOverride](#Section_20ce9a318eaa4a42b957b9111be76b2c) record that specifies how to override animated values. |
| TL\_TBPID\_PathEditRotationAngle | A [TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c) record that specifies the rotation angle of a motion path. This record is only used by the **TimeMotionBehaviorContainer** record. |
| TL\_TBPID\_PathEditRotationX | A TimeVariantFloat record that specifies the horizontal position of the rotation center of a motion path. This record is only used by the **TimeMotionBehaviorContainer** record. |
| TL\_TBPID\_PathEditRotationY | A TimeVariantFloat record that specifies the vertical position of the rotation center of a motion path. This record is only used by the **TimeMotionBehaviorContainer** record. |
| TL\_TBPID\_PointsTypes | A [TimePointsTypes](#Section_1656e976a2c14a19a9e9dccd516f24af) record that specifies the type of points in a motion path. This record is only used by the **TimeMotionBehaviorContainer** record. |

### TimeColorModel

*Referenced by:* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the color model used by a color animation.

Let the *corresponding time node* be as specified in the [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) record that contains this **TimeColorModel** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | colorModel | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**colorModel (4 bytes):** A signed integer that specifies the color model used by the color animation of the *corresponding time node*. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use red, green, and blue color components in [**red-green-blue (RGB)**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5). |
| 0x00000001 | Use hue, saturation, and luminance color components in [**HSL**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) color space. |
| 0x00000002 | Use index to [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5). |

### TimeColorDirection

*Referenced by:* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the interpolation direction of a color animation.

Let the *corresponding time node* be as specified in the [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) record that contains this **TimeColorDirection** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | colorDirection | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**colorDirection (4 bytes):** A **signed integer** that specifies the interpolation direction of the color animation of the *corresponding time node*. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use clockwise direction for the hue component in [**HSL**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5). |
| 0x00000001 | Use counterclockwise direction for the hue component in HSL color space. |

### TimeOverride

*Referenced by:* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies how an animation behavior overrides the values of the properties being animated on an object.

Let the *corresponding time node* be as specified in the [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) record that contains this **TimeOverride** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | override | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**override (4 bytes):** A **signed integer** that specifies how to override the values of the properties of the target object being animated by the animation behavior of the *corresponding time node*. It MUST be 0x00000001 that specifies the animated properties of the sub-elements contained inside the target object are cleared and inherited from the target object before the animation.

### TimeRuntimeContext

*Referenced by:* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the runtime context of an animation behavior.

Let the *corresponding time node* be as specified in the [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) record that contains this **TimeRuntimeContext** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | timeRuntimeContext (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be an odd number. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_String.

**timeRuntimeContext (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the runtime context of the animation behavior of the *corresponding time node*. It MUST be a valid RUNTIME\_CONTEXT as specified in the following ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:

1. RUNTIME\_CONTEXT = CONTEXT\_ATOM \*(";" CONTEXT\_ATOM) [";"]
2. CONTEXT\_ATOM = [RELATION\_OPERATOR SPACE] APP\_ABBREV [SPACE VERSION]
3. RELATION\_OPERATOR = GTE / GT / LTE / LT / NOT
4. APP\_ABBREV = ("p" / "P") ("p" / "P") ("t" / "T")
5. VERSION = DEC\_NUMBER ["." DEC\_NUMBER]
6. DEC\_NUMBER = 1\*DIGIT
7. GTE = "g" "t" "e"
8. GT = "g" "t"
9. LTE = "l" "t" "e"
10. LT = "l" "t"
11. NOT = "!"
12. SPACE = 1\*" "

The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 1

### TimePointsTypes

*Referenced by:* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the type of points in a motion path.

Let the *corresponding time node* be as specified in the [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) record that contains this **TimePointsTypes** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | timePointsTypes (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be an odd number. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_String.

**timePointsTypes (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the type of points in the path attribute and the description of the motion path near the current point. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 1

This field has no effect on the playing of the animation. It is only used when the motion path is edited in a user interface.

Each character in this string sequentially maps to a point defined in the path string as specified in the **varPath** field of the **TimeMotionBehaviorContainer** record (section [2.8.63](#Section_40b9860a04a54946ae4b51fdd1176cec)). It MUST be a sequence formed with characters from the following table.

| Character | Meaning |
| --- | --- |
| A | Auto line point. |
| a | Auto curve point. |
| F | Corner line point. |
| f | Corner curve point. |
| T | Straight line point. |
| t | Straight curve point. |
| S | Smooth line point. |
| s | Smooth curve point. |

### ClientVisualElementContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)*,* [*TimeBehaviorContainer*](#Section_8d75cc5b6f804b2e980ba521e2691e54)*,* [*TimeConditionContainer*](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the target for an animation effect.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| visualElementAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeClientVisualElement](#Section_38fb1fa50a62477a8b14178df22de812). |

**visualElementAtom (variable):** A [VisualElementAtom](#Section_7b47864505d44a2eb21ebbf183e3f73d) record that specifies the target to which the animation effect applies.

### VisualElementAtom

*Referenced by:* [*ClientVisualElementContainer*](#Section_80b3266a1fe64140acef0483ac355c89)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_VisualPageAtom](#Section_38fb1fa50a62477a8b14178df22de812) | A [VisualPageAtom](#Section_4ecd8e2993c14393a31c80a8ccd529ce) record that specifies the [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) as the target for a [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704). |
| RT\_VisualShapeAtom | A [VisualShapeOrSoundAtom](#Section_980f64aba892406bb4696299033ade3c) record that specifies the shape or sound information for an animation target. |

### VisualPageAtom

*Referenced by:* [*VisualElementAtom*](#Section_7b47864505d44a2eb21ebbf183e3f73d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) as the target for a [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_VisualPageAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**type (4 bytes):** A [**TimeVisualElementEnum**](#Section_203c5f54666740468a63915100e25880) enumeration that specifies the target element type. It MUST be TL\_TVET\_Page.

### VisualShapeOrSoundAtom

*Referenced by:* [*VisualElementAtom*](#Section_7b47864505d44a2eb21ebbf183e3f73d)

A variable type record whose type and meaning are dictated by the value of **refType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [TL\_ET\_SoundType](#Section_9d254b2a9ff04b99b03626152848bf69) | A [VisualSoundAtom](#Section_8cf2f3366e294368b5f1a21e8779f3af) record that specifies the sound information for an animation target. |
| TL\_ET\_ShapeType | A [VisualShapeAtom](#Section_a274411d0faa4993b202a7510a93c881) record that specifies the shape information for an animation target. |

### VisualSoundAtom

*Referenced by:* [*VisualShapeOrSoundAtom*](#Section_980f64aba892406bb4696299033ade3c)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the sound information for an animation target.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| refType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_VisualShapeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**type (4 bytes):** A [**TimeVisualElementEnum**](#Section_203c5f54666740468a63915100e25880) enumeration that specifies the target element type for the shape that the animation is applied to. It MUST NOT be TL\_TVET\_Page.

**refType (4 bytes):** An [**ElementTypeEnum**](#Section_9d254b2a9ff04b99b03626152848bf69) enumeration that specifies the target element type of the animation. It MUST be TL\_ET\_SoundType.

**soundIdRef (4 bytes):**  A [SoundIdRef](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) that specifies the value to look up in the **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)) to find the embedded audio.

**data1 (4 bytes):** MUST be 0xFFFFFFFF, and MUST be ignored.

**data2 (4 bytes):** MUST be 0xFFFFFFFF, and MUST be ignored.

### VisualShapeAtom

*Referenced by:* [*VisualShapeOrSoundAtom*](#Section_980f64aba892406bb4696299033ade3c)

A variable type record whose type and meaning are dictated by the value of **type**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [TL\_TVET\_ChartElement](#Section_203c5f54666740468a63915100e25880) | A [VisualShapeChartElementAtom](#Section_660780f345414850bae696b8ffa7d645) record that specifies the embedded chart shape for an animation target. |
| All other values | A [VisualShapeGeneralAtom](#Section_e3f4be5088fd43fdb68f82f2743e92ea) record that specifies the shape for an animation target. The shape MUST NOT be an embedded chart. |

### VisualShapeChartElementAtom

*Referenced by:* [*VisualShapeAtom*](#Section_a274411d0faa4993b202a7510a93c881)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies an embedded chart or its sub-elements to animate.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| refType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_VisualShapeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**type (4 bytes):** A [**TimeVisualElementEnum**](#Section_203c5f54666740468a63915100e25880) enumeration that specifies the target element type in the shape to which the animation is applied. It MUST be TL\_TVET\_ChartElement.

**refType (4 bytes):** An [**ElementTypeEnum**](#Section_9d254b2a9ff04b99b03626152848bf69) enumeration that specifies the target element type of the animation. It MUST be TL\_ET\_ShapeType.

**shapeIdRef (4 bytes):** An unsigned integer that specifies the target shape on the slide to animate.

**data1 (4 bytes):** An **unsigned integer** that specifies how the chart is built during its animation. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | The entire chart. |
| 0x00000001 | By series. |
| 0x00000002 | By category. |
| 0x00000003 | By series element. |
| 0x00000004 | By category element. |
| 0x00000005 | Custom chart element. |

**data2 (4 bytes):** A **signed integer** that specifies a chart element to animate. It MUST be greater than or equal to 0xFFFFFFFF (-1). The value 0xFFFFFFFF specifies that this record is invalid and SHOULD be ignored. The value 0x00000000 specifies the chart background. Values greater than 0x0000000 specify a one-based index in the list of chart elements specified by **data1**.

### VisualShapeGeneralAtom

*Referenced by:* [*VisualShapeAtom*](#Section_a274411d0faa4993b202a7510a93c881)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a shape or one of its parts as a target to animate.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| refType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_VisualShapeAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**type (4 bytes):** A [**TimeVisualElementEnum**](#Section_203c5f54666740468a63915100e25880) enumeration that specifies the target element type in the shape to which the animation is applied. It MUST NOT be TL\_TVET\_Page.

**refType (4 bytes):** An [**ElementTypeEnum**](#Section_9d254b2a9ff04b99b03626152848bf69) enumeration that specifies the target element type of the animation. It MUST be TL\_ET\_ShapeType.

**shapeIdRef (4 bytes):** An unsigned integer that specifies the target [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) on the [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) to animate.

**data1 (4 bytes):** A signed integer that specifies the zero-based character index of the beginning of a text range. It MUST be ignored unless **type** is TL\_TVET\_TextRange.

**data2 (4 bytes):** A signed integer that specifies the zero-based character index of the end of a text range. It MUST be ignored unless **type** is TL\_TVET\_TextRange.

### TimeColorBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a behavior that changes the color of an object. This animation behavior is applied to the object specified by the **behavior.clientVisualElement** field and used to animate one property specified by the **behavior.stringList** field. The property MUST be one from the following list that is a subset of the properties specified in the **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)): "ppt\_c", "style.color", "imageData.chromakey", "fill.color", "fill.color2", "stroke.color", "stroke.color2", "shadow.color", "shadow.color2", "extrusion.color", and "fillcolor".

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colorBehaviorAtom (60 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeColorBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**colorBehaviorAtom (60 bytes):** A [TimeColorBehaviorAtom](#Section_82b99b3c9e2e43778bf326b0e69537a5) record that specifies how to change the color of the object and which attributes within this field are valid.

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeColorBehaviorAtom

*Referenced by:* [*TimeColorBehaviorContainer*](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information for an animation that changes the color of an object.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| flag | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colorBy (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colorFrom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colorTo (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeColorBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000034. |

**flag (4 bytes):** A [TimeColorBehaviorPropertyUsedFlag](#Section_1949c9462a334a0b8f42d700a5ab7735) structure that specifies which fields are valid.

**colorBy (16 bytes):** A [TimeAnimateColorBy](#Section_e55e201bb36b47a89b054903cfcf2941) structure that specifies the offset color value.

MUST be ignored if **colorTo** exists. It MUST be ignored if **flag.fByPropertyUsed** is **FALSE**.

**colorFrom (16 bytes):** A [TimeAnimateColor](#Section_543d75a1d95d45aa8736547b8b0c7e62) structure that specifies the starting color value.

If **colorFrom** exists, **colorBy** or **colorTo** MUST also exist. It MUST be ignored if **flag.fFromPropertyUsed** is **FALSE**.

**colorTo (16 bytes):** A TimeAnimateColor structure that specifies the end color value.

MUST be ignored if **flag.fToPropertyUsed** is **FALSE**.

### TimeColorBehaviorPropertyUsedFlag

*Referenced by:* [*TimeColorBehaviorAtom*](#Section_82b99b3c9e2e43778bf326b0e69537a5)

A structure that specifies which attributes of a color animation are valid.

Let the *corresponding* ***TimeColorBehaviorAtom*** be specified by the TimeColorBehaviorAtom record that contains this **TimeColorBehaviorPropertyUsedFlag** record.

Let the *corresponding* ***TimeColorBehaviorContainer*** be specified by the **TimeColorBehaviorContainer** record (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)) that contains the *corresponding* ***TimeColorBehaviorAtom***.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | E | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | |

**A - fByPropertyUsed (1 bit):** A bit that specifies whether the **colorBy** field of the corresponding**TimeColorBehaviorAtom** is valid.

**B - fFromPropertyUsed (1 bit):** A **bit** that specifies whether the **colorFrom** field of the *corresponding* ***TimeColorBehaviorAtom*** is valid.

**C - fToPropertyUsed (1 bit):** A **bit** that specifies whether the **colorTo** field of the corresponding**TimeColorBehaviorAtom** is valid.

**D - fColorSpacePropertyUsed (1 bit):** A **bit** that specifies whether the **behavior.propertyList.rec** field of the *corresponding* ***TimeColorBehaviorContainer*** which has **behavior.propertyList.rec.rh.recInstance** equal to [TL\_TBPID\_ColorColorModel](#Section_5cb9da332a5e4738bd1c717db16bbcc6) was explicitly set by a user interface action.

**E - fDirectionPropertyUsed (1 bit):** A **bit** that specifies whether the **behavior.propertyList.rec** field of the *corresponding* ***TimeColorBehaviorContainer*** which has **behavior.propertyList.rec.rh.recInstance** equal to TL\_TBPID\_ColorDirection was explicitly set by a user interface action.

**reserved (27 bits):** MUST be zero, and MUST be ignored.

### TimeAnimateColorBy

*Referenced by:* [*TimeColorBehaviorAtom*](#Section_82b99b3c9e2e43778bf326b0e69537a5)

A variable type structure whose type and meaning are dictated by the value of the **model** field within these three structures, as specified by the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | An [RGBColorBy](#Section_34933da86c6e4a90bc499585875457a5) structure that specifies an [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color offset. |
| 0x00000001 | An [HSLColorBy](#Section_30ad7500612f41628e7e55d0e38e43aa) structure that specifies an [**HSL**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) color offset. |
| 0x00000002 | An [IndexSchemeColor](#Section_62ae89441ac84b6aaa5e0b1ea5583ace) structure that specifies a color scheme color. |

### RGBColorBy

*Referenced by:* [*TimeAnimateColorBy*](#Section_e55e201bb36b47a89b054903cfcf2941)

A structure that specifies the offset values during an animation of the red, green, and blue color components in [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5). These offset values are added to the starting value for each color component at specified time intervals until the animation is complete.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| red | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| green | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| blue | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**model (4 bytes):**  An unsigned integer that specifies this color is defined within the RGB color space. It MUST be 0x00000000.

**red (4 bytes):** A signed integer that specifies the offset value of the red color component. It MUST be greater than or equal to -255 and less than or equal to 255.

**green (4 bytes):** A signed integer that specifies the offset value of the green color component. It MUST be greater than or equal to -255 and less than or equal to 255.

**blue (4 bytes):** A signed integer that specifies the offset value of the blue color component. It MUST be greater than or equal to -255 and less than or equal to 255.

### HSLColorBy

*Referenced by:* [*TimeAnimateColorBy*](#Section_e55e201bb36b47a89b054903cfcf2941)

A structure that specifies the offset values during an animation of the hue, saturation, and luminance color components in [**HSL**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5). These offset values are added to the starting value for each color component at specified time intervals until the animation is complete.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| hue | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| saturation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| luminance | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**model (4 bytes):**  An unsigned integer that specifies that this color is defined within the HSL color space. It MUST be 0x00000001.

**hue (4 bytes):** A signed integer that specifies the offset value of the hue color component. It MUST be greater than or equal to -255 and less than or equal to 255.

**saturation (4 bytes):** A signed integer that specifies the offset value of the saturation color component. It MUST be greater than or equal to -255 and less than or equal to 255.

**luminance (4 bytes):** A signed integer that specifies the offset value of the luminance color component. It MUST be greater than or equal to -255 and less than or equal to 255.

### TimeAnimateColor

*Referenced by:* [*TimeColorBehaviorAtom*](#Section_82b99b3c9e2e43778bf326b0e69537a5)

A variable type structure whose type and meaning are dictated by the value of the **model** field within these two structures, as specified by the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | An [RGBColor](#Section_92e06186219841e59d3db426ad1adf4b) structure that specifies an [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color. |
| 0x00000002 | An [IndexSchemeColor](#Section_62ae89441ac84b6aaa5e0b1ea5583ace) structure that specifies a color scheme color. |

### RGBColor

*Referenced by:* [*TimeAnimateColor*](#Section_543d75a1d95d45aa8736547b8b0c7e62)

A structure that specifies the values of the red, green, and blue components of a color in the [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| red | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| green | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| blue | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**model (4 bytes):** An **unsigned integer** that specifies this color is defined within the RGB color space. It MUST be 0x00000000.

**red (4 bytes):** An **unsigned integer** that specifies the value of the red color component. It MUST be less than or equal to 255.

**green (4 bytes):** An **unsigned integer** that specifies the value of the green color component. It MUST be less than or equal to 255.

**blue (4 bytes):** An **unsigned integer** that specifies the value of the blue color component. It MUST be less than or equal to 255.

### IndexSchemeColor

*Referenced by:* [*TimeAnimateColor*](#Section_543d75a1d95d45aa8736547b8b0c7e62)*,* [*TimeAnimateColorBy*](#Section_e55e201bb36b47a89b054903cfcf2941)

A structure that specifies a color from a [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| model | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| index | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**model (4 bytes):**  An unsigned integer that specifies this color is from a color scheme. It MUST be 0x0000002.

**index (4 bytes):** An unsigned integer that specifies the index to the color scheme. It MUST be less than or equal to 7.

**reserved1 (4 bytes):** MUST be zero, and MUST be ignored.

**reserved2 (4 bytes):** MUST be zero, and MUST be ignored.

### TimeEffectBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies an effect behavior that transforms the image of an object. The transformation provides the ability to perform transitions on objects. There is no property to be animated in this behavior. The **behavior.stringList** field is ignored.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| effectBehaviorAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varType (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varProgress (13 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | varRuntimeContext (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table:

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeEffectBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**effectBehaviorAtom (16 bytes):** A [TimeEffectBehaviorAtom](#Section_bf8ed545f2f548528ffb7b69c6ddc128) record that specifies which attributes of this field and this **TimeEffectBehaviorContainer** are valid, and the transformation style of the object.

**varType (variable):** A [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies the object transitions for the effect. The **varType.rh.recInstance** sub-field MUST be 0x001. It MUST be ignored if **effectBehaviorAtom.fTypePropertyUsed** is **FALSE**.

The **varType.stringValue** sub-field MUST be a value specified in the following table:

| Value | Description |
| --- | --- |
| blinds(horizontal) | blinds horizontal object transition |
| blinds(vertical) | blinds vertical object transition |
| box(in) | box in object transition |
| box(out) | box out object transition |
| checkerboard(across) | checkerboard across object transition |
| checkerboard(down) | checkerboard down object transition |
| circle(in) | circle in object transition |
| circle(out) | circle out object transition |
| diamond(in) | diamond in object transition |
| diamond(out) | diamond out object transition |
| dissolve | dissolve object transition |
| fade | fade object transition |
| plus(in) | plus in object transition |
| plus(out) | plus out object transition |
| barn(inVertical) | barn in vertical object transition |
| barn(inHorizontal) | barn in horizontal object transition |
| barn(outVertical) | barn out vertical object transition |
| barn(outHorizontal) | barn out horizontal object transition |
| randombar(horizontal) | random bar horizontal object transition |
| randombar(vertical) | random bar vertical object transition |
| strips(downLeft) | strips down left object transitiion |
| strips(upLeft) | strips up left object transition |
| strips(downRight) | strips down right object transtition |
| strips(upRight) | strips up right object transition |
| wedge | wedge object transition |
| wheel(1) | wheel 1 object transition |
| wheel(2) | wheel 2 object transition |
| wheel(3) | wheel 3 object transition |
| wheel(4) | wheel 4 object transition |
| wheel(8) | wheel 8 object transition |
| wipe(right) | wipe right object transition |
| wipe(left) | wipe left object transition |
| wipe(up) | wipe up object transition |
| wipe(down) | wipe down object transition |

**varProgress (13 bytes):** An optional [TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c) record that specifies the normalized time for which the state of the animation is displayed until the end time. It MUST be ignored if **effectBehaviorAtom.fProgressPropertyUsed** is **FALSE**. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **varProgress.rh.recInstance** | MUST be 0x002. |
| **varProgress.floatValue** | MUST be greater than or equal to 0, the normalized start time of the animation, and less than or equal to 1, the normalized end time of the animation. |

**varRuntimeContext (variable):** An optional TimeVariantString record that specifies the runtime context. It MUST be ignored if **effectBehaviorAtom.fRuntimeContextObsolete** is **FALSE**. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **varRuntimeContext.rh.recInstance** | MUST be 0x003. |
| **varRuntimeContext.stringValue** | MUST have a format as specified by the **timeRuntimeContext** field of the [TimeRuntimeContext](#Section_4c48cb5aae834962a0ac994008e08193) record |

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeEffectBehaviorAtom

*Referenced by:* [*TimeEffectBehaviorContainer*](#Section_498a5d0f07254a06a7de7c67394e9146)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information of an animation that transforms the image of an object.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| effectTransition | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeEffectBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**A - fTransitionPropertyUsed (1 bit):** A **bit** that specifies whether **effectTransition** was explicitly set by a user interface action.

**B - fTypePropertyUsed (1 bit):** A bit that specifies whether the **varType** of the **TimeEffectBehaviorContainer** record (section 2.8.61) that contains this **TimeEffectBehaviorAtom** is valid.

**C - fProgressPropertyUsed (1 bit):** A bit that specifies whether the **varProgress** of the **TimeEffectBehaviorContainer** record that contains this **TimeEffectBehaviorAtom** is valid.

**D - fRuntimeContextObsolete (1 bit):** A bit that specifies whether the **varRuntimeContext** of the **TimeEffectBehaviorContainer** record that contains this **TimeEffectBehaviorAtom** is valid.

**reserved (28 bits):** MUST be zero, and MUST be ignored.

**effectTransition (4 bytes):** An unsigned integer that specifies how the image of the object is transformed. It MUST be ignored if **fTransitionPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Transition in: the object is completely invisible at the beginning of the transformation and becomes completely visible at the end of the transformation. |
| 0x00000001 | Transition out: the object is completely visible at the beginning of the transformation and becomes completely invisible at the end of the transformation. |

### TimeMotionBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a motion behavior that moves an object along a path. This animation behavior is applied to the object specified by the **timeBehavior.clientVisualElement** field and used to animate two properties specified by the **timeBehavior.stringList** field. The properties MUST be ones from the list that is specified in the **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)). If no properties are specified, "ppt\_x" and "ppt\_y" will be used. If only one property is specified, "ppt\_y" will be used as the second property.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| motionBehaviorAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varPath (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved (13 bytes, optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | timeBehavior (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeMotionBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**motionBehaviorAtom (40 bytes):** A [TimeMotionBehaviorAtom](#Section_0c7cb657218342c8ae2e887766db0815) record that specifies the origin of the path, which attributes of this field and this **TimeMotionBehaviorContainer** record are valid, and a path specified by a starting point, an endpoint, and an offset value.

**varPath (variable):** An optional [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies the path for the animation motion. The **varPath.rh.recInstance** sub-field MUST be 0x001. It MUST be a valid MOTION\_PATH as specified in the following ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:

1. MOTION\_PATH = 1\*PATH\_COMMAND
2. PATH\_COMMAND = MOVE\_COMMAND / LINE\_COMMAND / CURVE\_COMMAND / CLOSE\_COMMAND
3. MOVE\_COMMAND = ("m" / "M") SPACE COORD\_NUMBER SPACE COORD\_NUMBER
4. LINE\_COMMAND = ("l" / "L") SPACE COORD\_NUMBER SPACE COORD\_NUMBER
5. CURVE\_COMMAND = ("c" / "C") SPACE COORD\_NUMBER SPACE COORD\_NUMBER SPACE COORD\_NUMBER SPACE COORD\_NUMBER SPACE COORD\_NUMBER SPACE COORD\_NUMBER
6. CLOSE\_COMMAND = ("z" / "Z")
7. COORD\_NUMBER = (DEC\_NUMBER ["." DEC\_NUMBER]) / ("(" FORMULA ")")
8. DEC\_NUMBER = 1\*DIGIT
9. SPACE = 1\*" "

The FORMULA rule is specified by the **varFormula** field of the [TimeAnimationValueListEntry](#Section_be583d6811d743c2a3008ef2ffac7841) record.

The path is specified by defining an action and coordinates that go along with the action. The allowed action types that are understood within a path are listed in the following table. If the action is expressed in uppercase, the following point(s) are to be interpreted as absolute coordinates, or a point on the slide. If the action is expressed in lowercase, the point(s) are to be interpreted as relative coordinates, or an offset from the current position.

| Action | Meaning |
| --- | --- |
| **M** = move to | This action requires a point specified by two coordinates.  Move to will move the object to the specified point. It does not animate the object to that point; rather, the object will snap to the given point. |
| **L** = line to | This action requires a point specified by two coordinates.  Line to will move the object to the specified point along the shortest line between the current point and the specified point. |
| **C** = curve to | This action requires three points specified by six coordinates.  Curve to will move the object along a cubic Bezier curve specified by the current point and the three provided points. |
| **Z**=close loop | This action requires no points.  Close loop will move the object back to where it was before the path began along the shortest line between the current point and the starting point.  The relative and absolute versions of this action are identical. |
| **E**=end | This action requires no points.  End will terminate the motion path. Any action specified in the string after the End action is ignored. If this action is not present at the end of a string and the string ends, this action will be implied.  The relative and absolute versions of this action are identical. |

Thus the total allowed set is {M,L,C,Z,E,m,l,c,z,e).

Points are expressed as normalized values of the slide size, for example, 1,1 means the lower-right corner of the slide in absolute coordinates, or the slide width and height in relative coordinates. Expressing a coordinate less than 1 but greater than 0 MUST be prefixed with 0 before the decimal point.

Formulas can also be used for any coordinate. To use a formula, the entire formula MUST be inside parentheses. Formula syntax is specified in the **varFormula** field of the TimeAnimationValueListEntry record.

**reserved (13 bytes):** An optional [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) record that MUST be ignored.

**timeBehavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeMotionBehaviorAtom

*Referenced by:* [*TimeMotionBehaviorContainer*](#Section_40b9860a04a54946ae4b51fdd1176cec)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information of an animation that moves an object along a path.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | G | H | reserved2 | | | | | | | | | | | | | | | | | | | | | | | |
| fXBy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fYBy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fXFrom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fYFrom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fXTo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fYTo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behaviorOrigin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeMotionBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000020. |

**A - fByPropertyUsed (1 bit):** A bit that specifies whether **fXBy** and **fYBy** were explicitly set by a user interface action.

**B - fFromPropertyUsed (1 bit):** A bit that specifies whether **fXFrom** and **fYFrom** were explicitly set by a user interface action If **fFromPropertyUsed** is **TRUE**, **fByPropertyUsed** or **fToPropertyUsed** MUST also be **TRUE**.

**C - fToPropertyUsed (1 bit):** A bit that specifies whether **fXTo** and **fYTo** were explicitly set by a user interface action.

**D - fOriginPropertyUsed (1 bit):** A bit that specifies whether **behaviorOrigin** was explicitly set by a user interface action.

**E - fPathPropertyUsed (1 bit):** A bit that specifies whether the **varPath** of the **TimeMotionBehaviorContainer** record (section 2.8.63) that contains this **TimeMotionBehaviorAtom** is valid.

**F - reserved1 (1 bit):** MUST be 0x0.

**G - fEditRotationPropertyUsed (1 bit):** A bit that specifies whether the **timeBehaviorContainer.propertyList** of the **TimeMotionBehaviorContainer** record that contains this **TimeMotionBehaviorAtom** has items of types [TL\_TBPID\_PathEditRotationAngle](#Section_5cb9da332a5e4738bd1c717db16bbcc6), TL\_TBPID\_PathEditRotationX, and TL\_TBPID\_PathEditRotationY as specified in the **TimePropertyID4TimeBehavior** enumeration.

**H - fPointsTypesPropertyUsed (1 bit):** A bit that specifies whether the **timeBehaviorContainer.propertyList** of the **TimeMotionBehaviorContainer** record that contains this **TimeMotionBehaviorAtom** has items of type TL\_TBPID\_PointsTypes as specified in the **TimePropertyID4TimeBehavior** enumeration.

**reserved2 (24 bits):** MUST be 0x000000.

**fXBy (4 bytes):** A [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) that specifies the offset value of the object position in the horizontal axis. It MUST be ignored if **fByPropertyUsed** is **FALSE** or if **fToPropertyUsed** is **TRUE**.

**fYBy (4 bytes):** A floating-point number that specifies the offset value of the object position in the vertical axis. It MUST be ignored if **fByPropertyUsed** is **FALSE** or if **fToPropertyUsed** is **TRUE**.

**fXFrom (4 bytes):** A floating-point number that specifies the starting position of the object in the horizontal axis. It MUST be ignored if **fFromPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead.

**fYFrom (4 bytes):** A floating-point number that specifies the starting position of the object in the vertical axis. It MUST be ignored if **fFromPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead.

**fXTo (4 bytes):** A floating-point number that specifies the end position of the object in the horizontal axis. It MUST be ignored if **fToPropertyUsed** is **FALSE**.

**fYTo (4 bytes):** A floating-point number that specifies the end position of the object in the vertical axis. It MUST be ignored if **fToPropertyUsed** is **FALSE**.

**behaviorOrigin (4 bytes):** An **unsigned integer** that specifies the origin of the motion path. It MUST be ignored if **fOriginPropertyUsed** is **FALSE** and a value of 0x00000002 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | The origin is at the upper left corner of the slide that contains the object. |
| 0x00000001 | Same as 0x00000000. |
| 0x00000002 | The origin is at the center of the object. |

### TimeRotationBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a rotation behavior that rotates an object. This animation behavior is applied to the object specified by the **behavior.clientVisualElement** field and used to animate one property specified by the **behavior.stringList** field. The property MUST be "r" or "ppt\_r" from the list that is specified in the **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rotationBehaviorAtom (28 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeRotationBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**rotationBehaviorAtom (28 bytes):** A [TimeRotationBehaviorAtom](#Section_0fc7d6f315a0464b958c6bfdbf874050) record that specifies how to rotate the object and which attributes within this field are valid.

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeRotationBehaviorAtom

*Referenced by:* [*TimeRotationBehaviorContainer*](#Section_2ef1f0c624534be7875ea1a7d7201580)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies animation information for object rotation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fBy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fFrom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fTo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rotationDirection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeRotationBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**A - fByPropertyUsed (1 bit):** A bit that specifies whether **fBy** was explicitly set by a user interface action.

**B - fFromPropertyUsed (1 bit):** A bit that specifies whether **fFrom** was explicitly set by a user interface action. If **fFromPropertyUsed** is **TRUE**, **fByPropertyUsed** or **fToPropertyUsed** MUST also be **TRUE**.

**C - fToPropertyUsed (1 bit):** A bit that specifies whether **fTo** was explicitly set by a user interface action.

**D - fDirectionPropertyUsed (1 bit):** A **bit** that specifies whether **rotationDirection** was explicitly set by a user interface action.

**reserved (28 bits):** MUST be zero, and MUST be ignored.

**fBy (4 bytes):** A [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) that specifies the offset degree of rotation. It MUST be ignored if **fByPropertyUsed** is **FALSE** or if **fToPropertyUsed** is **TRUE**.

**fFrom (4 bytes):** A floating-point number that specifies the starting degree of rotation. It MUST be ignored if **fFromPropertyUsed** is **FALSE** and a value of 0 MUST be used instead.

**fTo (4 bytes):** A floating-point number that specifies the end degree of rotation. It MUST be ignored if **fToPropertyUsed** is **FALSE** and a value of 360 MUST be used instead.

**rotationDirection (4 bytes):** An **unsigned integer** that specifies the rotation direction. It MUST be ignored if **fDirectionPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Rotate clockwise. |
| 0x00000001 | Rotate counter clockwise. |

### TimeScaleBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a scale behavior that animates the size of an object. This animation behavior is applied to the object specified by the **behavior.clientVisualElement** field and used to animate two properties including "ScaleX" and "ScaleY" from the list that is specified in the **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)). The **behavior.stringList** field is ignored.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| scaleBehaviorAtom (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeScaleBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**scaleBehaviorAtom (40 bytes):** A [TimeScaleBehaviorAtom](#Section_4e1b5b50334d4aa5a00c4d95f087b148) record that specifies how to scale the size of an object and which attributes within this field are valid.

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeScaleBehaviorAtom

*Referenced by:* [*TimeScaleBehaviorContainer*](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies animation information for scaling the size of an object.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fXBy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fYBy | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fXFrom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fYFrom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fXTo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fYTo | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fZoomContents | | | | | | | | unused | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeScaleBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000020. |

**A - fByPropertyUsed (1 bit):** A bit that specifies whether **fXBy** and **fYBy** were explicitly set by a user interface action.

**B - fFromPropertyUsed (1 bit):** A bit that specifies whether **fXFrom** and **fYFrom** were explicitly set by a user interface action. If **fFromPropertyUsed** is **TRUE**, **fByPropertyUsed** or **fToPropertyUsed** MUST also be **TRUE**.

**C - fToPropertyUsed (1 bit):** A bit that specifies whether **fXTo** and **fYTo** were explicitly set by a user interface action.

**D - fZoomContentsUsed (1 bit):** A bit that specifies whether **fZoomContents** was explicitly set by a user interface action.

**reserved (28 bits):** MUST be zero, and MUST be ignored.

**fXBy (4 bytes):** A [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) that specifies the offset value of the width of the object that is animated. It MUST be ignored if **fByPropertyUsed** is **FALSE** or if **fToPropertyUsed** is **TRUE.**

**fYBy (4 bytes):** A floating-point number that specifies the offset value of the height of the object that is animated. It MUST be ignored if **fByPropertyUsed** is **FALSE** or if **fToPropertyUsed** is **TRUE.**

**fXFrom (4 bytes):** A floating-point number that specifies the starting value of the width of the object that is animated. It MUST be ignored if **fFromPropertyUsed** is **FALSE** and a value of 0 MUST be used instead.

**fYFrom (4 bytes):** A floating-point number that specifies the starting value of the height of the object that is animated. It MUST be ignored if **fFromPropertyUsed** is **FALSE** and a value of 0 MUST be used instead.

**fXTo (4 bytes):** A floating-point number that specifies the end value of the width of the object that is animated. It MUST be ignored if **fToPropertyUsed** is **FALSE** and a value of 100 MUST be used instead.

**fYTo (4 bytes):** A floating-point number that specifies the end value of the height of the object that is animated. It MUST be ignored if **fToPropertyUsed** is **FALSE** and a value of 100 MUST be used instead.

**fZoomContents (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether the content contained by the scaling object is also scaled. It MUST be ignored if **fZoomContentsUsed** is **FALSE** and a value of 0x01 MUST be used instead.

**unused (3 bytes):** Undefined and MUST be ignored.

### TimeSetBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a set behavior that assigns a value to a property. This animation behavior is applied to the object specified by the **behavior.clientVisualElement** field and used to animate one property specified by the **behavior.stringList** field. The property MUST be from the list that is specified in the **TimeStringListContainer** record (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| setBehaviorAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varTo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeSetBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**setBehaviorAtom (16 bytes):** A [TimeSetBehaviorAtom](#Section_f8876381cf7f4d2b9888965e2929c9dc) record that specifies the type of the value to be set and which attributes of this field and this **TimeSetBehaviorContainer** are valid.

**varTo (variable):** A [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies the value that to be set to the property. The **varTo.rh.recInstance** subfield MUST be 0x001. It MUST be ignored if **setBehaviorAtom.fToPropertyUsed** is FALSE.

The allowed set of strings depends on the specific attribute names used in the **behavior.stringList** field. The supported attribute names are specified by the **TimeStringListContainer** record. The **varTo.stringValue** MUST be a value as specified in the following tables.

When using attribute names in the following table, the **setBehaviorAtom.valueType** field MUST be [TL\_TABVT\_Number](#Section_2817d0100a0347dd82993610e25a4645).

| Attribute Name | varTo.stringValue Preset |
| --- | --- |
| style.visibility | "hidden", "visible" |
| style.fontWeight | "none", "normal", "bold" |
| style.fontStyle | "none", "normal", "italic" |
| style.textEffectEmboss | "none", "normal", "emboss" |
| style.textShadow | "none", "normal", "auto" |
| style.textTransform | "none", "normal", "sub", "super" |
| style.textDecorationUnderline | "false", "true" |
| style.textEffectOutline | "false", "true" |
| style.textDecorationLineThrough | "false", "true" |
| imageData.grayscale | "false", "true" |
| fill.on | "false", "f", "t", "true" |
| fill.type | "solid", "pattern", "tile", "frame", "gradientUnscaled", "gradient", "gradientCenter", "gradientRadial", "gradientTile", "background" |
| fill.method | "none", "linear", "sigma", "any" |
| stroke.on | "false", "f", "t", "true" |
| stroke.linestyle | "single", "thinThin", "thinThick", "thickThin", "thickBetweenThin" |
| stroke.dashstyle | "solid", "dot", "dash", "dashDot", "longDash", "longDashDot", "longDashDotDot" |
| stroke.filltype | "solid", "tile", "pattern", "frame" |
| stroke.startArrow | "none", "block", "classic", "diamond", "oval", "open", "chevron", "doublechevron" |
| stroke.endArrow | "none", "block", "classic", "diamond", "oval", "open", "chevron", "doublechevron" |
| stroke.startArrowWidth | "narrow", "medium", "wide" |
| stroke.startArrowLength | "short", "medium", "long" |
| stroke.endArrowWidth | "narrow", "medium", "wide" |
| stroke.endArrowLength | "short", "medium", "long" |
| shadow.on | "false", "f", "t", "true" |
| shadow.type | "single", "double", "emboss", "perspective" |
| skew.on | "false", "f", "t", "true" |
| extrusion.on | "false", "f", "t", "true" |
| extrusion.type | "parallel", "perspective" |
| extrusion.render | "solid", "wireframe", "boundingcube" |
| extrusion.plane | "xy", "zx", "yz" |
| extrusion.lockrotationcenter | "false", "true" |
| extrusion.autorotationcenter | "false", "true" |
| extrusion.colormode | "false", "true" |

When using attribute names in the following table, the **setBehaviorAtom.valueType** field MUST be TL\_TABVT\_Number.

| Attribute Name | varTo.stringValue |
| --- | --- |
| ppt\_x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf) (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the [TimeAnimationValueListEntry](#Section_be583d6811d743c2a3008ef2ffac7841) record. |
| ppt\_y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| ppt\_w | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| ppt\_h | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| ppt\_r | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| xshear | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| yshear | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| ScaleX | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| ScaleY | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| r | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| style.opacity | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| style.rotation | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| style.fontSize | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| style.sRotation | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.cropTop | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.cropBottom | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.cropLeft | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.cropRight | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.gain | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.blacklevel | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| imageData.gamma | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.opacity | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.opacity2 | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.angle | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.focus | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.focusposition.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.focusposition.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.focussize.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| fill.focussize.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| stroke.weight | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| stroke.opacity | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| stroke.imagesize.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| stroke.imagesize.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.opacity | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.offset.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.offset.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.offset2.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.offset2.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.origin.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.origin.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.matrix.xtox | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.matrix.ytox | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.matrix.ytoy | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.matrix.perspectiveX | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| shadow.matrix.perspectiveY | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.offset.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.offset.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.origin.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.origin.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.matrix.xtox | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.matrix.ytox | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.matrix.ytoy | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.matrix.perspectiveX | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| skew.matrix.perspectiveY | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.viewpointorigin.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.viewpointorigin.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.viewpoint.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.viewpoint.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.viewpoint.z | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.skewangle | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.skewamt | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.backdepth | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.foredepth | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.orientation.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.orientation.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.orientation.z | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.orientationangle | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.rotationangle.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.rotationangle.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.rotationcenter.x | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.rotationcenter.y | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |
| extrusion.rotationcenter.z | MUST be a valid FORMULA\_OR\_NUMBER as specified in the following ABNF (specified in [RFC5234]) grammar:   1. FORMULA\_OR\_NUMBER = SETFORMULA / REAL\_NUMBER 2. SETFORMULA = "(" FORMULA ")" 3. REAL\_NUMBER = DEC\_REGULAR\_VALUE / DEC\_PURE\_FLOATING 4. DEC\_REGULAR\_VALUE = [ "-" ] DEC\_NUMBER ["."] [DEC\_NUMBER] [DEC\_EXPONENT] 5. DEC\_PURE\_FLOATING = [ "-" ] "." DEC\_NUMBER [DEC\_EXPONENT] 6. DEC\_NUMBER = 1\*DIGIT 7. DEC\_EXPONENT = [ "-" ] ( "e" / "E") DEC\_NUMBER   The FORMULA rule is specified by the **varFormula** field of the TimeAnimationValueListEntry record. |

When using attribute names in the following table, the **setBehaviorAtom.valueType** field MUST be TL\_TABVT\_Color.

| Attribute Name | varTo.stringValue |
| --- | --- |
| ppt\_c | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| fillcolor | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| style.color | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| imageData.chromakey | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| fill.color | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| fill.color2 | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| stroke.color | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| stroke.color2 | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| shadow.color | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| shadow.color2 | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |
| extrusion.color | MUST be a valid SETCOLOR as specified in the following ABNF (specified in [RFC5234]) grammar:   1. SETCOLOR = "#" RED GREEN BLUE 2. RED = 2HEXDIG 3. GREEN = 2HEXDIG 4. BLUE = 2HEXDIG |

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeSetBehaviorAtom

*Referenced by:* [*TimeSetBehaviorContainer*](#Section_5428095fe4c443d0ad36b8b240e1338b)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies animation information for an object or object property.

[**TimeAnimateBehaviorValueTypeEnum**](#Section_2817d0100a0347dd82993610e25a4645) enumeration specifies the object or object property that will be animated.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| valueType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeSetBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**A - fToPropertyUsed (1 bit):** A bit that specifies whether the **varTo** of the **TimeSetBehaviorContainer** record (section 2.8.69) that contains this **TimeSetBehaviorAtom** is valid.

**B - fValueTypePropertyUsed (1 bit):** A bit that specifies whether **valueType** was explicitly set by a user interface action.

**reserved (30 bits):** MUST be zero, and MUST be ignored.

**valueType (4 bytes):** A **TimeAnimateBehaviorValueTypeEnum** enumeration that specifies the type of object or object property to which to apply an animation. It MUST be ignored if **fValueTypePropertyUsed** is **FALSE** and a value of TL\_TABVT\_Number MUST be used instead.

### TimeCommandBehaviorContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a command behavior that performs a command as an animation. There is no property to be animated in this behavior. The **behavior.stringList** field is ignored.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commandBehaviorAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| varCommand (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| behavior (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeCommandBehaviorContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**commandBehaviorAtom (16 bytes):** A [TimeCommandBehaviorAtom](#Section_19b49fc55a7f4022ba930df4d5269bb3) record that specifies the property usage flag of the command behavior and the type of the command behavior.

**varCommand (variable):** An optional [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies the command to be performed. It MUST be ignored if **commandBehaviorAtom.fCommandPropertyUsed** is FALSE. The **varCommand.rh.recInstance** sub-field MUST be 0x001.

When **commandBehaviorAtom.commandBehaviorType** is [TL\_TCBT\_Event](#Section_c4bc4b37b85647f2a88f738f87f14b2d), the command MUST be "onstopaudio" that specifies to stop playing of all audio.

When **commandBehaviorAtom.commandBehaviorType** is TL\_TCBT\_Call, the command MUST be one from the following table.

| Command | Meaning |
| --- | --- |
| play | Play corresponding media. |
| playFrom(s) | Play corresponding media starting from s, where s is the number of seconds from the beginning of the clip. |
| pause | Pause corresponding media. |
| resume | Resume playing of corresponding media. |
| stop | Stop playing of corresponding media. |
| togglePause | Play corresponding media if media is paused, or pause corresponding media if media is playing. If the corresponding media is not active, this command will restart the media and play from its beginning. |

When **commandBehaviorAtom.commandBehaviorType** is TL\_TCBT\_OleVerb, the command MUST be the string representation of an integer that specifies the embedded object verb number that determines the action.

**behavior (variable):** A **TimeBehaviorContainer** record (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)) that specifies the common behavior information.

### TimeCommandBehaviorAtom

*Referenced by:* [*TimeCommandBehaviorContainer*](#Section_d188069b704c4f9d838898a7eb357f0f)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information of a command that is performed as an animation.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| commandBehaviorType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeCommandBehavior](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**A - fTypePropertyUsed (1 bit):** A bit that specifies whether **commandBehaviorType** was explicitly set by a user interface action.

**B - fCommandPropertyUsed (1 bit):** A bit that specifies whether **varCommand** of the **TimeCommandBehaviorContainer** record (section 2.8.71) that contains this **TimeCommandBehaviorAtom** is valid.

**reserved (30 bits):** MUST be zero, and MUST be ignored.

**commandBehaviorType (4 bytes):** A [**TimeCommandBehaviorTypeEnum**](#Section_c4bc4b37b85647f2a88f738f87f14b2d) enumeration that specifies the type of the command. It MUST be ignored if **fTypePropertyUsed** is **FALSE** and a value of TL\_TCBT\_Call MUST be used instead.

### TimeIterateDataAtom

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies how an animation is applied to sub-elements of the target object for a repeated effect. It can be applied to the letters, words, or [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) within a target object.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iterateInterval | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iterateType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iterateDirection | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| iterateIntervalType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeIterateData](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**iterateInterval (4 bytes):** An unsigned integer that specifies the interval time of iterations, which can be either absolute time or a percentage as specified in **iterateIntervalType**. It MUST be ignored if **fIterateIntervalPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead.

**iterateType (4 bytes):** An unsigned integer that specifies the type of iteration behavior. It MUST be ignored if **fIterateTypePropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | All at once: all sub-elements animate together with no interval time. |
| 0x00000001 | By word: sub-elements are words. |
| 0x00000002 | By letter: sub-elements are letters. |

**iterateDirection (4 bytes):** An unsigned integer that specifies the direction of the iteration behavior. It MUST be ignored if **fIterateDirectionPropertyUsed** is **FALSE** and a value of 0x00000001 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Backwards: from the last sub-element to the first sub-element. |
| 0x00000001 | Forwards: from the first sub-element to the last sub-element. |

**iterateIntervalType (4 bytes):** An unsigned integer that specifies the type of interval time as specified in **iterateInterval**. It MUST be ignored if **fIterateIntervalTypePropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Seconds: **iterateInterval** is absolute time in milliseconds. |
| 0x00000001 | Percentage: **iterateInterval** is a percentage of animation duration, in tenths of a percent. |

**A - fIterateDirectionPropertyUsed (1 bit):** A **bit** that specifies whether **iterateDirection** was explicitly set by a user interface action.

**B - fIterateTypePropertyUsed (1 bit):** A bit that specifies whether **iterateType** was explicitly set by a user interface action.

**C - fIterateIntervalPropertyUsed (1 bit):** A bit that specifies whether **iterateInterval** was explicitly set by a user interface action.

**D - fIterateIntervalTypePropertyUsed (1 bit):** A bit that specifies whether **iterateIntervalType** was explicitly set by a user interface action.

**reserved (28 bits):** MUST be zero, and MUST be ignored.

### TimeSequenceDataAtom

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies sequencing information for the child nodes of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f). Each child can only be activated after its prior sibling has been activated.

Let the *corresponding time node* be specified by the **ExtTimeNodeContainer** record (section 2.8.15) that contains this **TimeSequenceDataAtom** record.

Let the *corresponding next time condition list* be specified by the **rgBeginTimeCondition** field in *corresponding time node*, which specifies the [**time conditions**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704) to activate the next child time node.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| concurrency | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| nextAction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| previousAction | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeSequenceData](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000014. |

**concurrency (4 bytes):** An **unsigned integer** that specifies the concurrency behavior of the child nodes of the *corresponding time node*. It MUST be ignored if **fConcurrencyPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | No concurrency: the next child is activated only after the current child ends and conditions in the *corresponding next time condition list* are met. |
| 0x00000001 | Concurrency enabled: the next child can be activated after the current child is activated and conditions in the *corresponding next time condition list* are met. |

**nextAction (4 bytes):** An **unsigned integer** that specifies actions when traversing forward in the sequence of child nodes of the *corresponding time node*. It MUST be ignored if **fNextActionPropertyUsed** is **FALSE** and a value of 0x00000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Take no action. |
| 0x00000001 | Traverse forward the current child node along the timeline to a natural end time.  The natural end time of a child node is the time when the child node will end without interventions. If the end time is infinite, the child node will never stop. The natural end time of the child node is specified as the latest non-infinite end time of its child nodes. |

**previousAction (4 bytes):** An **unsigned integer** that specifies actions when traversing backward in the sequence of child nodes of the *corresponding time node*. It MUST be ignored if **fPreviousActionPropertyUsed** is **FALSE** and a value of 0x0000000 MUST be used instead. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Take no action. |
| 0x00000001 | Continue backwards in the sequence until reaching a child that starts only on the next time condition as specified in the *corresponding next time condition list*. |

**reserved1 (4 bytes):** MUST be zero, and MUST be ignored.

**A - fConcurrencyPropertyUsed (1 bit):** A bit that specifies whether **concurrency** was explicitly set by a user interface action.

**B - fNextActionPropertyUsed (1 bit):** A bit that specifies whether **nextAction** was explicitly set by a user interface action.

**C - fPreviousActionPropertyUsed (1 bit):** A **bit** that specifies whether **previousAction** was explicitly set by a user interface action.

**reserved2 (29 bits):** MUST be zero, and MUST be ignored.

### TimeConditionContainer

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704) of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| conditionAtom (24 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| visualElement (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Subfields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be a [ConditionEnum](#Section_a6a1754c4001423a8d0ee62630705624) with a value greater than or equal to 0x000 and less than or equal to 0x005. |
| **rh.recType** | MUST be an [RT\_TimeConditionContainer](#Section_38fb1fa50a62477a8b14178df22de812). |

**conditionAtom (24 bytes):** A [TimeConditionAtom](#Section_6d79388473f24b87b8b1a1b0e6310ad6) record that specifies the information that is used to evaluate the time condition.

**visualElement (variable):** An optional **ClientVisualElementContainer** record (section [2.8.44](#Section_80b3266a1fe64140acef0483ac355c89)) that specifies the target object that participates in the evaluation of the time condition. It MUST exist if and only if **conditionAtom.triggerObject** is [TL\_TOT\_VisualElement](#Section_bdd8b7511e27473f92d8e8947888274a).

### TimeConditionAtom

*Referenced by:* [*TimeConditionContainer*](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information used to evaluate when a condition will be true.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| triggerObject | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| triggerEvent | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| id | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| delay | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TimeCondition](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000010. |

**triggerObject (4 bytes):** A [**TriggerObjectEnum**](#Section_bdd8b7511e27473f92d8e8947888274a) enumeration that specifies the type of target that participates in the evaluation of the condition.

**triggerEvent (4 bytes):** An unsigned integer that specifies the event that causes the condition to be **TRUE**. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | None. |
| 0x00000001 | OnBegin event that occurs on the specified target. |
| 0x00000003 | Start of the [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) that is specified by **id.** |
| 0x00000004 | End of the time node that is specified by **id.** |
| 0x00000005 | Mouse click. |
| 0x00000007 | Mouse over. |
| 0x00000009 | OnNext event that occurs on the specified target. |
| 0x0000000A | OnPrev event that occurs on the specified target. |
| 0x0000000B | Stop audio event that occurs when an "onstopaudio" command is fired. |

**id (4 bytes):** An unsigned integer that specifies the target that participates in the evaluation of the condition.

When **triggerObject** is TL\_TOT\_TimeNode, this field specifies the time node identifier.

When **triggerObject** is TL\_TOT\_RuntimeNodeRef, this field MUST be 0x00000002 that specifies that all child time node of the **ExtTimeNodeContainer** record (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) or **SubEffectContainer** record (section [2.8.16](#Section_8f1586ac86864bda9ba58cc43ba91642)) that contains this record are the target.

**delay (4 bytes):** A signed integer that specifies the offset time, in milliseconds, that sets when the condition will become **TRUE**.

### TimeModifierAtom

*Referenced by:* [*ExtTimeNodeContainer*](#Section_83d39c580d3046a4bffb188d792cb5a7)*,* [*SubEffectContainer*](#Section_8f1586ac86864bda9ba58cc43ba91642)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the type of data to be modified and the new data value.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be [RT\_TimeModifier](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**type (4 bytes):** An **unsigned integer** that specifies the type of data to be modified. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Repeat count. |
| 0x00000001 | Repeat duration. |
| 0x00000002 | Speed. |
| 0x00000003 | Accelerate. |
| 0x00000004 | Decelerate. |
| 0x00000005 | Automatic reverse. |

**value (4 bytes):** An **unsigned integer** that specifies the new value.

### TimeVariant

*Referenced by:* [*TimeAnimationValueListEntry*](#Section_be583d6811d743c2a3008ef2ffac7841)

A variable type record whose type and meaning are dictated by the value of the **type** field of any of these four structures, as specified by the following table.

| Value | Meaning |
| --- | --- |
| TL\_TVT\_Bool | A [TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) record that specifies a Boolean value. |
| TL\_TVT\_Int | A [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) that specifies an integer value. |
| TL\_TVT\_Float | A [TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c) record that specifies a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d). |
| TL\_TVT\_String | A [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) record that specifies a string. |

### TimeVariantBool

*Referenced by:* [*TimeVariant*](#Section_8080ab7d824644d882c5a20d1b92dc6c)*,* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)*,* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a Boolean value.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | boolValue | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000002. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Bool.

**boolValue (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies the value.

### TimeVariantInt

*Referenced by:* [*TimeMotionBehaviorContainer*](#Section_40b9860a04a54946ae4b51fdd1176cec)*,* [*TimeVariant*](#Section_8080ab7d824644d882c5a20d1b92dc6c)*,* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a signed integer value.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | intValue | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Int.

**intValue (4 bytes):** A signed integer that specifies the value.

### TimeVariantFloat

*Referenced by:* [*TimeEffectBehaviorContainer*](#Section_498a5d0f07254a06a7de7c67394e9146)*,* [*TimeVariant*](#Section_8080ab7d824644d882c5a20d1b92dc6c)*,* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)*,* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | floatValue | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000005. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_Float.

**floatValue (4 bytes):** A floating-point number that specifies the value.

### TimeVariantString

*Referenced by:* [*TimeAnimateBehaviorContainer*](#Section_bc65cd1c14a74c0dbc2d192bab64a713)*,* [*TimeAnimationValueListEntry*](#Section_be583d6811d743c2a3008ef2ffac7841)*,* [*TimeCommandBehaviorContainer*](#Section_d188069b704c4f9d838898a7eb357f0f)*,* [*TimeEffectBehaviorContainer*](#Section_498a5d0f07254a06a7de7c67394e9146)*,* [*TimeMotionBehaviorContainer*](#Section_40b9860a04a54946ae4b51fdd1176cec)*,* [*TimeSetBehaviorContainer*](#Section_5428095fe4c443d0ad36b8b240e1338b)*,* [*TimeStringListContainer*](#Section_99109d34b306454e8e19da1f090cedd9)*,* [*TimeVariant*](#Section_8080ab7d824644d882c5a20d1b92dc6c)*,* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a Unicode string.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | stringValue (variable) | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) structure that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_TimeVariant](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be an odd number. |

**type (1 byte):** A [**TimeVariantTypeEnum**](#Section_9900a3e8334a470583969b25de7958bc) enumeration that specifies the data type of this record. It MUST be TL\_TVT\_String.

**stringValue (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the value. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen – 1.

## Text Types

### DocumentTextInfoContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies default settings and user preferences for text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsoku (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontCollection (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textCFDefaultsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textPFDefaultsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| defaultRulerAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textSIDefaultsAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textMasterStyleAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_Environment](#Section_38fb1fa50a62477a8b14178df22de812). |

**kinsoku (variable):** An optional **KinsokuContainer** record (section [2.9.2](#Section_d22fdfcfb0334a9ab4beabc379ad0039)) that specifies the user preferences for East Asian text line breaking settings.

**fontCollection (variable):** An optional **FontCollectionContainer** record (section [2.9.8](#Section_88da04bf68384f879a87adf067543837)) that specifies the collection of fonts used.

**textCFDefaultsAtom (variable):** An optional [TextCFExceptionAtom](#Section_1130b69a13264feda16556ef29921312) record that specifies default settings for character-level style and formatting.

**textPFDefaultsAtom (variable):**  An optional [TextPFExceptionAtom](#Section_ec7fbd0dcb3347ad94dc41788732df14) record that specifies default settings for paragraph-level style and formatting.

**defaultRulerAtom (variable):** An optional [DefaultRulerAtom](#Section_f126079c590540fbb2d70f478adb44b8) record that specifies the default ruler and corresponding options.

**textSIDefaultsAtom (variable):** A [TextSIExceptionAtom](#Section_4713a7ea63624fd88231a32637a6c3d2) record that specifies default settings for language and spelling information.

**textMasterStyleAtom (variable):** A [TextMasterStyleAtom](#Section_5febad270c484f98b655562b986f5874) record that specifies the character-level and paragraph-level formatting of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

### KinsokuContainer

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies user preferences for East Asian text line breaking settings.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuLeadingAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuFollowingAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be an [RT\_Kinsoku](#Section_38fb1fa50a62477a8b14178df22de812). |

**kinsokuAtom (12 bytes):** A [KinsokuAtom](#Section_f4aeb62ddb3148ed9ab76369697a62b7) record that specifies the type of East Asian text line breaking settings.

**kinsokuLeadingAtom (variable):** An optional [KinsokuLeadingAtom](#Section_2a0209cc48b34505a201853c17e88d65) record that specifies a list of characters that cannot appear immediately after a line break of East Asian text. It MUST exist if and only if **kinsokuAtom.level** is 0x00000002. If this field exists and the document contains a **Kinsoku9Container** record (section [2.9.6](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)), the **Kinsoku9Container** record MUST NOT contain a **kinsokuLeadingAtom** field.

**kinsokuFollowingAtom (variable):** An optional [KinsokuFollowingAtom](#Section_009ecdc1817c4fb0a286eebd73f8fd06) record that specifies a list of characters that cannot appear immediately before a line break of East Asian text. It MUST exist if and only if **kinsokuAtom.level** is 0x00000002. If this field exists and the document contains a **Kinsoku9Container** record, the **Kinsoku9Container** record MUST NOT contain a **kinsokuFollowingAtom** field.

### KinsokuAtom

*Referenced by:* [*KinsokuContainer*](#Section_d22fdfcfb0334a9ab4beabc379ad0039)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the type of East Asian text line breaking.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| level | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):**  A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be an [RT\_KinsokuAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**level (4 bytes):** A signed integer that specifies the type of East Asian text line breaking. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use standard line breaking settings. |
| 0x00000001 | Use strict line breaking settings for Japanese text. |
| 0x00000002 | Use the customized line breaking settings specified by the **kinsokuLeadingAtom** and **kinsokuFollowingAtom** fields of the **KinsokuContainer** (section 2.9.2) that contains this KinsokuAtom. |

### KinsokuLeadingAtom

*Referenced by:* [*Kinsoku9Container*](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)*,* [*KinsokuContainer*](#Section_d22fdfcfb0334a9ab4beabc379ad0039)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a list of characters that cannot appear immediately after a line break of East Asian text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuLeading (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number |

**kinsokuLeading (variable):** An array of **UTF-16 Unicode** [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) characters that specifies the list of characters.

### KinsokuFollowingAtom

*Referenced by:* [*Kinsoku9Container*](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)*,* [*KinsokuContainer*](#Section_d22fdfcfb0334a9ab4beabc379ad0039)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a list of characters that cannot appear immediately before a line break of East Asian text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuFollowing (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number |

**kinsokuFollowing (variable):** An array of **UTF-16 Unicode** [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) characters that specifies the list of characters.

### Kinsoku9Container

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies the user preferences for East Asian text line break settings for the following languages: Japanese, Korean, Simplified Chinese and Traditional Chinese.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsoku9Atom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuLeadingAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| kinsokuFollowingAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be an [RT\_Kinsoku](#Section_38fb1fa50a62477a8b14178df22de812). |

**kinsoku9Atom (12 bytes):** A [Kinsoku9Atom](#Section_1ad9ce1b530247c18706c137a541efe9) record that specifies the types of East Asian text line breaking for the following languages: Japanese, Korean, Simplified Chinese and Traditional Chinese. This field takes precedence over the settings specified by the **kinsokuAtom** field of the **KinsokuContainer** record (section [2.9.2](#Section_d22fdfcfb0334a9ab4beabc379ad0039)) in the document. At most one of the following sub-fields MUST be set to 0x00000002: **kinsoku9Atom.korLevel**, **kinsoku9Atom.scLevel**, **kinsoku9Atom.tcLevel**, or **kinsoku9Atom.jpnLevel**.

**kinsokuLeadingAtom (variable):** An optional [KinsokuLeadingAtom](#Section_2a0209cc48b34505a201853c17e88d65) record that specifies a list of characters that cannot appear immediately after a line break of East Asian text. It MUST exist if and only if the **kinsokuLeadingAtom** field of the **KinsokuContainer** record does not exist and one of **kinsoku9Atom.korLevel, kinsoku9Atom.scLevel, kinsoku9Atom.tcLevel**, or **kinsoku9Atom.jpnLevel** is 0x00000002.

**kinsokuFollowingAtom (variable):** An optional [KinsokuFollowingAtom](#Section_009ecdc1817c4fb0a286eebd73f8fd06) record that specifies a list of characters that cannot appear immediately before a line break of East Asian text. It MUST exist if and only if the **kinsokuFollowingAtom** field of the **KinsokuContainer** record does not exist and one of **kinsoku9Atom.korLevel, kinsoku9Atom.scLevel, kinsoku9Atom.tcLevel**, or **kinsoku9Atom.jpnLevel** is 0x00000002.

### Kinsoku9Atom

*Referenced by:* [*Kinsoku9Container*](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the types of East Asian text line breaking for the following languages: Japanese, Korean, Simplified Chinese and Traditional Chinese.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | | B | | C | | D | | reserved | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be an [RT\_KinsokuAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**A - korLevel (2 bits):** An **unsigned integer** that specifies the type of East Asian text line breaking applied to Korean text. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use standard line breaking settings. |
| 0x00000002 | Use the customized line breaking settings specified by the [KinsokuLeadingAtom](#Section_2a0209cc48b34505a201853c17e88d65) and [KinsokuFollowingAtom](#Section_009ecdc1817c4fb0a286eebd73f8fd06) records contained in either the KinsokuContainer (section [2.9.2](#Section_d22fdfcfb0334a9ab4beabc379ad0039)) or **Kinsoku9Container** record (section 2.9.6). |

**B - scLevel (2 bits):** An **unsigned integer** that specifies the type of East Asian text line breaking applied to Simplified Chinese text. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use standard line breaking settings. |
| 0x00000002 | Use the customized line breaking settings specified by the KinsokuLeadingAtom and KinsokuFollowingAtom records contained in either the **KinsokuContainer** or **Kinsoku9Container** record. |

**C - tcLevel (2 bits):** An **unsigned integer** that specifies the type of East Asian text line breaking applied to Traditional Chinese text. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use standard line breaking settings. |
| 0x00000002 | Use the customized line breaking settings specified by the KinsokuLeadingAtom and KinsokuFollowingAtom records contained in either the **KinsokuContainer** or **Kinsoku9Container** record. |

**D - jpnLevel (2 bits):**  An **unsigned integer** that specifies the type of East Asian text line breaking applied to Japanese text. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00000000 | Use standard line breaking settings. |
| 0x00000001 | Use strict line breaking settings. |
| 0x00000002 | Use the customized line breaking settings specified by the KinsokuLeadingAtom and KinsokuFollowingAtom records contained in either the **KinsokuContainer** or **Kinsoku9Container** record. |

**reserved (24 bits):** MUST be zero and MUST be ignored.

### FontCollectionContainer

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about fonts in the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgFontCollectionEntry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_FontCollection](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgFontCollectionEntry (variable):** An array of [FontCollectionEntry](#Section_fb4d26df15c74f978d8f6c73ea98e91d) structures that specifies information about the fonts. The size, in bytes, of the array is specified by **rh.recLen**.

### FontCollectionEntry

*Referenced by:* [*FontCollection10Container*](#Section_8c62fed6394f4c49ae8aa73c2a8026d1)*,* [*FontCollectionContainer*](#Section_88da04bf68384f879a87adf067543837)

A structure that specifies information about a font contained in the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| fontEntityAtom (76 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontEmbedData1 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontEmbedData2 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontEmbedData3 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontEmbedData4 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**fontEntityAtom (76 bytes):** A [FontEntityAtom](#Section_b5946b702fbc4f7ba119b31fcbeb1794) record that specifies the required attributes of the font.

**fontEmbedData1 (variable):** An optional [FontEmbedDataBlob](#Section_09f6010a4a6d4ba7a05a1acab10322fd) record that specifies the plain style data of an embedded font.

**fontEmbedData2 (variable):** An optional FontEmbedDataBlob record that specifies the bold style data of an embedded font.

**fontEmbedData3 (variable):** An optional FontEmbedDataBlob record that specifies the italic style data of an embedded font.

**fontEmbedData4 (variable):** An optional FontEmbedDataBlob record that specifies the bold and italic style data of an embedded font.

### FontEntityAtom

*Referenced by:* [*FontCollectionEntry*](#Section_fb4d26df15c74f978d8f6c73ea98e91d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the information needed to define the attributes of a font, such as typeface name, character set, and so on, and corresponds in part to a Windows Logical Font (**LOGFONT**) structure [[MC-LOGFONT]](%5bMC-LOGFONT%5d.pdf).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lfFaceName (64 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lfCharSet | | | | | | | | A | unused | | | | | | | B | C | D | E | F | | | | lfPitchAndFamily | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be greater than or equal to 0 and less than or equal to 128. |
| **rh.recType** | MUST be an [RT\_FontEntityAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be equal to 0x00000044. |

**lfFaceName (64 bytes):** A [char2](#Section_2bd860f7f6144ed0a0ad5520e82856b7) that specifies the typeface name of the font. It corresponds to the **lfFaceName** field of the **LOGFONT** structure. The length of this string MUST NOT exceed 32 characters, including the terminating **null** character.

**lfCharSet (1 byte):** An unsigned byte that specifies the character set. It corresponds to the **lfCharSet** field of the **LOGFONT** structure.

**A - fEmbedSubsetted (1 bit):** A bit that specifies whether a subset of this font is embedded.

**unused (7 bits):** Undefined and MUST be ignored.

**B - rasterFontType (1 bit):** A bit that specifies whether the font is a raster font.

**C - deviceFontType (1 bit):** A bit that specifies whether the font is a device font.

**D - truetypeFontType (1 bit):** A bit that specifies whether the font is a TrueType font.

**E - fNoFontSubstitution (1 bit):** A bit that specifies whether font substitution logic is not applied for this font.

**F - reserved (4 bits):** MUST be zero and MUST be ignored.

**lfPitchAndFamily (1 byte):** An unsigned byte that specifies the pitch and family of the font. It corresponds to the **lfPitchAndFamily** field of the **LOGFONT** structure.

### FontCollection10Container

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about fonts in the presentation for international support.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgFontCollectionEntry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be [RT\_FontCollection10](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgFontCollectionEntry (variable):** An array of [FontCollectionEntry](#Section_fb4d26df15c74f978d8f6c73ea98e91d) structures that specifies information about the fonts. The size, in bytes, of the array is specified by **rh.recLen**.

### FontEmbedFlags10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about how font data is embedded.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | unused | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_FontEmbedFlags10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**A - fSubset (1 bit):** A bit that specifies whether embedded fonts contain data for only those characters in use.

**B - fSubsetOptionConfirmed (1 bit):** A bit that specifies whether the user has confirmed the choice of **fSubset** in the user interface.

**unused (30 bits):** Undefined and MUST be ignored.

### TextCFExceptionAtom

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies character-level style and formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextCharFormatExceptionAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**cf (variable):** A [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) structure that specifies character-level style and formatting.

### TextCFException

*Referenced by:* [*TextCFExceptionAtom*](#Section_1130b69a13264feda16556ef29921312)*,* [*TextCFRun*](#Section_426f313aa4f34ffba0419a74ccf23f17)*,* [*TextMasterStyleLevel*](#Section_b033d0f4aa9643dca333835849858f1f)

A structure that specifies character-level style and formatting, font information, coloring and positioning.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| masks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontStyle (optional) | | | | | | | | | | | | | | | | fontRef (optional) | | | | | | | | | | | | | | | |
| oldEAFontRef (optional) | | | | | | | | | | | | | | | | ansiFontRef (optional) | | | | | | | | | | | | | | | |
| symbolFontRef (optional) | | | | | | | | | | | | | | | | fontSize (optional) | | | | | | | | | | | | | | | |
| color (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position (optional) | | | | | | | | | | | | | | | |

**masks (4 bytes):** A [CFMasks](#Section_bbca8581d0114293a375b209523cf962) structure that specifies whether certain fields in this **TextCFException** record exist and are valid. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **masks.pp10ext** | MUST be zero. |
| **masks.newEATypeface** | MUST be zero. |
| **masks.csTypeface** | MUST be zero. |
| **masks.pp11ext** | MUST be zero. |

**fontStyle (2 bytes):** A [CFStyle](#Section_3ea010b90ef94c059982618130ca66cd) structure that specifies the character-level style. It MUST exist if and only if one or more of the following fields are **TRUE**: **masks.bold**, **masks.italic**, **masks.underline**, **masks.shadow**, **masks.fehint**, **masks.kumi**, **masks.emboss,** or **masks.fHasStyle**.

**fontRef (2 bytes):** An optional [FontIndexRef](#Section_75b7196f2d274aefb8415695fe584140) that specifies the font. It MUST exist if and only if **masks.typeface** is **TRUE**.

**oldEAFontRef (2 bytes):** An optional FontIndexRef that specifies an East Asian font. It MUST exist if and only if **masks.oldEATypeface** is **TRUE**.

**ansiFontRef (2 bytes):** An optional FontIndexRef that specifies an ANSI font. It MUST exist if and only if **masks.ansiTypeface** is **TRUE**.

**symbolFontRef (2 bytes):** An optional FontIndexRef that specifies a symbol font. It MUST exist if and only if **masks.symbolTypeface** is **TRUE**.

**fontSize (2 bytes):** An optional signed integer that specifies the size, in points, of the font. It MUST be greater than or equal to 1 and less than or equal to 4000. It MUST exist if and only if **masks.size** is **TRUE**.

**color (4 bytes):** An optional [ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) structure that specifies the color of the text. It MUST exist if and only if **masks.color** is **TRUE**.

**position (2 bytes):** An optional **signed integer** that specifies the baseline position of a text run relative to the baseline of the text line as a percentage of line height. It MUST be greater than or equal to -100 and less than or equal to 100. It MUST exist if and only if **masks.position** is **TRUE**.

### CFMasks

*Referenced by:* [*TextCFException*](#Section_c75024a214cb4d7d9964bdab2fcd9d93)*,* [*TextCFException10*](#Section_77fea531e8394bc9b8137adc3f2adea0)*,* [*TextCFException9*](#Section_589af75ae0c34592b1f29471a0fa24a3)

A structure that specifies character-level font, text-formatting, and extensibility options.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | E | F | G | H | I | J | K | | | | L | | M | N | O | P | Q | R | S | T | U | V | W | reserved | | | | |

**A - bold (1 bit):** A bit that specifies whether the **fontStyle.bold** field of the TextCFException structure that contains this CFMasks is valid.

**B - italic (1 bit):** A bit that specifies whether the **fontStyle.italic** field of the TextCFException structure that contains this CFMasks is valid.

**C - underline (1 bit):** A bit that specifies whether the **fontStyle.underline** field of the TextCFException structure that contains this **CFMasks** is valid.

**D - unused1 (1 bit):** Undefined and MUST be ignored.

**E - shadow (1 bit):** A bit that specifies whether the **fontStyle.shadow** field of the TextCFException structure that contains this **CFMasks** is valid.

**F - fehint (1 bit):** A bit that specifies whether the **fontStyle.fehint** field of the TextCFException structure that contains this **CFMasks** is valid.

**G - unused2 (1 bit):** Undefined and MUST be ignored.

**H - kumi (1 bit):** A bit that specifies whether the **fontStyle.kumi** field of the TextCFException structure that contains this **CFMasks** is valid.

**I - unused3 (1 bit):** Undefined and MUST be ignored.

**J - emboss (1 bit):** A bit that specifies whether the **fontStyle.emboss** field of the TextCFException structure that contains this **CFMasks** is valid.

**K - fHasStyle (4 bits):** An unsigned integer that specifies whether the **fontStyle** field of the TextCFException structure that contains this **CFMasks** exists.

**L - unused4 (2 bits):** Undefined and MUST be ignored.

**M - typeface (1 bit):** A bit that specifies whether the **fontRef** field of the TextCFException structure that contains this **CFMasks** exists.

**N - size (1 bit):** A bit that specifies whether the **fontSize** field of the TextCFException structure that contains this **CFMasks** exists.

**O - color (1 bit):** A bit that specifies whether the **color** field of the TextCFException structure that contains this **CFMasks** exists.

**P - position (1 bit):** A bit that specifies whether the **position** field of the TextCFException structure that contains this **CFMasks** exists.

**Q - pp10ext (1 bit):** A bit that specifies whether the **pp10runid** and **unused** fields of the TextCFException9 structure that contains this **CFMasks** exist.

**R - oldEATypeface (1 bit):** A bit that specifies whether the **oldEAFontRef** field of the TextCFException structure that contains this **CFMasks** exists.

**S - ansiTypeface (1 bit):** A bit that specifies whether the **ansiFontRef** field of the TextCFException structure that contains this **CFMasks** exists.

**T - symbolTypeface (1 bit):** A bit that specifies whether the **symbolFontRef** field of the TextCFException structure that contains this **CFMasks** exists.

**U - newEATypeface (1 bit):** A bit that specifies whether the **newEAFontRef** field of the TextCFException10 structure that contains this **CFMasks** exists.

**V - csTypeface (1 bit):** A bit that specifies whether the **csFontRef** field of the TextCFException10 structure that contains this CFMasks exists.

**W - pp11ext (1 bit):** A bit that specifies whether the **pp11ext** field of the TextCFException10 structure that contains this **CFMasks** exists.

**reserved (5 bits):** MUST be zero and MUST be ignored.

### CFStyle

*Referenced by:* [*TextCFException*](#Section_c75024a214cb4d7d9964bdab2fcd9d93)

A structure that specifies character-level text formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | E | F | G | H | I | J | pp9rt | | | | K | |

**A - bold (1 bit):** A bit that specifies whether the characters are bold.

**B - italic (1 bit):** A bit that specifies whether the characters are italicized.

**C - underline (1 bit):** A bit that specifies whether the characters are underlined.

**D - unused1 (1 bit):** Undefined and MUST be ignored.

**E - shadow (1 bit):** A bit that specifies whether the characters have a shadow effect.

**F - fehint (1 bit):** A bit that specifies whether characters originated from double-byte input.

**G - unused2 (1 bit):** Undefined and MUST be ignored.

**H - kumi (1 bit):** A bit that specifies whether Kumimoji are used for vertical text.

**I - unused3 (1 bit):** Undefined and MUST be ignored.

**J - emboss (1 bit):** A bit that specifies whether the characters are embossed.

**pp9rt (4 bits):** An unsigned integer that specifies the run grouping of additional text properties in [StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f) record.

**K - unused4 (2 bits):** Undefined and MUST be ignored.

### TextCFException9

*Referenced by:* [*StyleTextProp9*](#Section_fb67da927dd849649e44b8b92291ee87)*,* [*TextDefaults9Atom*](#Section_ab49e0370973424eb155250559a98723)*,* [*TextMasterStyle9Level*](#Section_adfd57bc4c134f27854fce73ddbcd0c0)

A structure that specifies additional character-level formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| masks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A (optional) | | | | unused (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**masks (4 bytes):** A [CFMasks](#Section_bbca8581d0114293a375b209523cf962) structure that specifies which fields of this **TextCFException9** exist and are valid. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **masks.bold** | MUST be zero. |
| **masks.italic** | MUST be zero. |
| **masks.underline** | MUST be zero. |
| **masks.shadow** | MUST be zero. |
| **masks.fehint** | MUST be zero. |
| **masks.kumi** | MUST be zero. |
| **masks.emboss** | MUST be zero. |
| **masks.fHasStyle** | MUST be zero. |
| **masks.typeface** | MUST be zero. |
| **masks.size** | MUST be zero. |
| **masks.color** | MUST be zero. |
| **masks.position** | MUST be zero. |
| **masks.oldEATypeface** | MUST be zero. |
| **masks.ansiTypeface** | MUST be zero. |
| **masks.symbolTypeface** | MUST be zero. |
| **masks.newEATypeface** | MUST be zero. |
| **masks.csTypeface** | MUST be zero. |
| **masks.pp11ext** | MUST be zero. |

**A - pp10runid (4 bits):** An optional unsigned integer that specifies an identifier for a character run that contains [TextCFException10](#Section_77fea531e8394bc9b8137adc3f2adea0) data. It MUST exist if and only if **masks.pp10ext** is **TRUE**.

**unused (28 bits):** Undefined and MUST be ignored. It MUST exist if and only if **masks.pp10ext** is **TRUE**.

### TextCFException10

*Referenced by:* [*StyleTextProp10Atom*](#Section_663f260adf984185b4fdf092d3826548)*,* [*TextDefaults10Atom*](#Section_43975b61904e46c38d4bec08ed1fcb22)*,* [*TextMasterStyle10Level*](#Section_e32c88b5ce1a4a8282c13c740433a04a)

A structure that specifies additional character-level formatting information.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| masks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| newEAFontRef (optional) | | | | | | | | | | | | | | | | csFontRef (optional) | | | | | | | | | | | | | | | |
| pp11ext (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**masks (4 bytes):** A [CFMasks](#Section_bbca8581d0114293a375b209523cf962) structure that specifies which fields of this **TextCFException10** exist and are valid.

| Field | Meaning |
| --- | --- |
| **masks.bold** | MUST be zero. |
| **masks.italic** | MUST be zero. |
| **masks.underline** | MUST be zero. |
| **masks.shadow** | MUST be zero. |
| **masks.fehint** | MUST be zero. |
| **masks.kumi** | MUST be zero. |
| **masks.emboss** | MUST be zero. |
| **masks.fHasStyle** | MUST be zero. |
| **masks.typeface** | MUST be zero. |
| **masks.size** | MUST be zero. |
| **masks.color** | MUST be zero. |
| **masks.position** | MUST be zero. |
| **masks.pp10ext** | MUST be zero. |
| **masks.oldEATypeface** | MUST be zero. |
| **masks.ansiTypeface** | MUST be zero. |
| **masks.symbolTypeface** | MUST be zero. |

**newEAFontRef (2 bytes):** An optional [FontIndexRef10](#Section_7c6b57e1753c43faa37155540f554a60) that specifies a new East Asian font. It MUST exist if and only if **masks.newEATypeface** is **TRUE**.

**csFontRef (2 bytes):** An optional FontIndexRef10 that specifies a complex script font. It MUST exist if and only if **masks.csTypeface** is **TRUE**.

**pp11ext (4 bytes):** Undefined and MUST be ignored. It MUST exist if and only if **masks.pp11ext** is **TRUE**.

### TextPFExceptionAtom

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies paragraph-level formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| reserved | | | | | | | | | | | | | | | | pf (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextParagraphFormatExceptionAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**reserved (2 bytes):** MUST be zero and MUST be ignored.

**pf (variable):** A [TextPFException](#Section_c15a13b3db2c4b50a7e608045581a663) structure that specifies paragraph-level formatting.

### TextPFException

*Referenced by:* [*TextMasterStyleLevel*](#Section_b033d0f4aa9643dca333835849858f1f)*,* [*TextPFExceptionAtom*](#Section_ec7fbd0dcb3347ad94dc41788732df14)*,* [*TextPFRun*](#Section_4e95a4f9a9af42b5b81af8f991cb1418)

A structure that specifies paragraph-level formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| masks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bulletFlags (optional) | | | | | | | | | | | | | | | | bulletChar (optional) | | | | | | | | | | | | | | | |
| bulletFontRef (optional) | | | | | | | | | | | | | | | | bulletSize (optional) | | | | | | | | | | | | | | | |
| bulletColor (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textAlignment (optional) | | | | | | | | | | | | | | | | lineSpacing (optional) | | | | | | | | | | | | | | | |
| spaceBefore (optional) | | | | | | | | | | | | | | | | spaceAfter (optional) | | | | | | | | | | | | | | | |
| leftMargin (optional) | | | | | | | | | | | | | | | | indent (optional) | | | | | | | | | | | | | | | |
| defaultTabSize (optional) | | | | | | | | | | | | | | | | tabStops (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fontAlign (optional) | | | | | | | | | | | | | | | | wrapFlags (optional) | | | | | | | | | | | | | | | |
| textDirection (optional) | | | | | | | | | | | | | | | |

**masks (4 bytes):** A [PFMasks](#Section_2a02831a088b44e784c9c185ab314a71) structure that specifies whether certain fields of this **TextPFException** record exist and are valid. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **masks.bulletBlip** | MUST be zero. |
| **masks.bulletHasScheme** | MUST be zero. |
| **masks.bulletScheme** | MUST be zero. |

**bulletFlags (2 bytes):** An optional [BulletFlags](#Section_06ef8761a2344e81892f3d4a2f789529) structure that specifies whether certain bullet-related fields are valid. It MUST exist if and only if any of **masks.hasBullet**, **masks.bulletHasFont**, **masks.bulletHasColor**, or **masks.bulletHasSize** is **TRUE**.

**bulletChar (2 bytes):** An optional **signed integer** that specifies a **UTF-16 Unicode** [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) character to display as the bullet. The character MUST NOT be the NUL character 0x0000. It MUST exist if and only if **masks.bulletChar** is **TRUE**.

**bulletFontRef (2 bytes):** An optional [FontIndexRef](#Section_75b7196f2d274aefb8415695fe584140) that specifies the font to use for the bullet. It MUST exist if and only if **masks.bulletFont** is **TRUE**. This field is valid if and only if **bulletFlags.fBulletHasFont** is **TRUE**.

**bulletSize (2 bytes):** An optional [BulletSize](#Section_8febb693899148419c9e3622cb064d50) that specifies the size of the bullet. It MUST exist if and only if **masks.bulletSize** is **TRUE**. This field is valid if and only if **bulletFlags.fBulletHasSize** is **TRUE**.

**bulletColor (4 bytes):** An optional [ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) structure that specifies the color of a bullet. This field exists if and only if **masks.bulletColor** is **TRUE**. This field is valid if and only if **bulletFlags.fBulletHasColor** is **TRUE**.

**textAlignment (2 bytes):** An optional [**TextAlignmentEnum**](#Section_5fe09a4e204e41dda1e683ea729e0f25) enumeration that specifies the alignment of the paragraph. It MUST exist if and only if **masks.align** is **TRUE**.

**lineSpacing (2 bytes):** An optional [ParaSpacing](#Section_f3952baf27cc40f2918b86e42159e0a4) that specifies the spacing between lines in the paragraph. It MUST exist if and only if **masks.lineSpacing** is **TRUE**.

**spaceBefore (2 bytes):** An optional ParaSpacing that specifies the size of the spacing before the paragraph. It MUST exist if and only if **masks.spaceBefore** is **TRUE**.

**spaceAfter (2 bytes):** An optional ParaSpacing that specifies the size of the spacing after the paragraph. It MUST exist if and only if **masks.spaceAfter** is **TRUE**.

**leftMargin (2 bytes):** An optional [MarginOrIndent](#Section_ab67e36095f442289b23fea825377c95) that specifies the left margin of the paragraph. It MUST exist if and only if **masks.leftMargin** is **TRUE**.

**indent (2 bytes):** An optional MarginOrIndent that specifies the indentation of the paragraph. It MUST exist if and only if **masks.indent** is **TRUE**.

**defaultTabSize (2 bytes):** An optional [TabSize](#Section_8b1533a8e2104bcebb11fdb1301a27bc) that specifies the default tab size of the paragraph. It MUST exist if and only if **masks.defaultTabSize** is **TRUE**.

**tabStops (variable):** An optional [TabStops](#Section_89ee352d52194cf29a562a67fe85b201) structure that specifies the tab stops for the paragraph. It MUST exist if and only if **masks.tabStops** is **TRUE**.

**fontAlign (2 bytes):** An optional [**TextFontAlignmentEnum**](#Section_c642180e61ca4a05868731a0cf5a5495) enumeration that specifies the font alignment of the text in the paragraph. It MUST exist if and only if **masks.fontAlign** is **TRUE**.

**wrapFlags (2 bytes):** An optional [PFWrapFlags](#Section_4f9ab03992704588b33f9d580a117a8f) structure that specifies text-wrapping options for the paragraph. It MUST exist if and only if any of **masks.charWrap**, **masks.wordWrap**, or **masks.overflow** is **TRUE**.

**textDirection (2 bytes):** An optional [**TextDirectionEnum**](#Section_764983cc84564fcc9712e93cbf15acf9) enumeration that specifies the direction of the text in this paragraph. It MUST exist if and only if **masks.textDirection** is **TRUE**.

### PFMasks

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)*,* [*TextPFException9*](#Section_3e80f159dab6415da40918ea6975b0c9)

A structure that specifies which paragraph-level formatting fields are valid in the TextPFException or TextPFException9 record that contains this **PFMasks** structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z | reserved2 | | | | | |

**A - hasBullet (1 bit):** A bit that specifies whether the **bulletFlags** field of the TextPFException structure that contains this **PFMasks** exists and whether **bulletFlags.fHasBullet** is valid.

**B - bulletHasFont (1 bit):** A bit that specifies whether the **bulletFlags** field of the TextPFException structure that contains this **PFMasks** exists and whether **bulletFlags.fBulletHasFont** is valid.

**C - bulletHasColor (1 bit):** A bit that specifies whether the **bulletFlags** field of the TextPFException structure that contains this **PFMasks** exists and whether **bulletFlags.fBulletHasColor** is valid.

**D - bulletHasSize (1 bit):**  A bit that specifies whether the **bulletFlags** field of the TextPFException structure that contains this **PFMasks** exists and whether **bulletFlags.fBulletHasSize** is valid.

**E - bulletFont (1 bit):** A bit that specifies whether the **bulletFontRef** field of the TextPFException structure that contains this **PFMasks** exists.

**F - bulletColor (1 bit):** A bit that specifies whether the **bulletColor** field of the TextPFException structure that contains this **PFMasks** exists.

**G - bulletSize (1 bit):** A bit that specifies whether the **bulletSize** field of the TextPFException structure that contains this **PFMasks** exists.

**H - bulletChar (1 bit):** A bit that specifies whether the **bulletChar** field of the TextPFException structure that contains this **PFMasks** exists.

**I - leftMargin (1 bit):** A bit that specifies whether the **leftMargin** field of the TextPFException structure that contains this **PFMasks** exists.

**J - unused (1 bit):** Undefined and MUST be ignored.

**K - indent (1 bit):** A bit that specifies whether the **indent** field of the TextPFException structure that contains this **PFMasks** exists.

**L - align (1 bit):** A bit that specifies whether the **textAlignment** field of the TextPFException structure that contains this **PFMasks** exists.

**M - lineSpacing (1 bit):** A bit that specifies whether the **lineSpacing** field of the TextPFException structure that contains this **PFMasks** exists.

**N - spaceBefore (1 bit):** A bit that specifies whether the **spaceBefore** field of the TextPFException that contains this **PFMasks** exists.

**O - spaceAfter (1 bit):** A bit that specifies whether the **spaceAfter** field of the TextPFException structure that contains this **PFMasks** exists.

**P - defaultTabSize (1 bit):** A bit that specifies whether the **defaultTabSize** field of the TextPFException structure that contains this **PFMasks** exists.

**Q - fontAlign (1 bit):** A bit that specifies whether the **fontAlign** field of the TextPFException structure that contains this **PFMasks** exists.

**R - charWrap (1 bit):** A bit that specifies whether the **wrapFlags** field of the TextPFException structure that contains this PFMasks exists and whether **wrapFlags.charWrap** is valid.

**S - wordWrap (1 bit):** A bit that specifies whether the **wrapFlags** field of the TextPFException structure that contains this **PFMasks** exists and whether **wrapFlags.wordWrap** is valid.

**T - overflow (1 bit):** A bit that specifies whether the **wrapFlags** field of the TextPFException structure that contains this **PFMasks** exists and whether **wrapFlags.overflow** is valid.

**U - tabStops (1 bit):** A bit that specifies whether the **tabStops** field of the TextPFException structure that contains this **PFMasks** exists.

**V - textDirection (1 bit):** A bit that specifies whether the **textDirection** field of the TextPFException structure that contains this **PFMasks** exists.

**W - reserved1 (1 bit):** MUST be zero and MUST be ignored.

**X - bulletBlip (1 bit):** A bit that specifies whether the **bulletBlipRef** field of the TextPFException9 structure that contains this **PFMasks** exists.

**Y - bulletScheme (1 bit):** A bit that specifies whether the **bulletAutoNumberScheme** field of the TextPFException9 structure that contains this **PFMasks** exists.

**Z - bulletHasScheme (1 bit):** A bit that specifies whether the **fBulletHasAutoNumber** field of the TextPFException9 structure that contains this **PFMasks** exists.

**reserved2 (6 bits):** MUST be zero and MUST be ignored.

### BulletFlags

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

A structure that specifies bullet properties.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | reserved | | | | | | | | | | | |

**A - fHasBullet (1 bit):** A **bit** that specifies whether a bullet exists.

**B - fBulletHasFont (1 bit):** A bit that specifies whether the bullet has a font.

**C - fBulletHasColor (1 bit):** A bit that specifies whether the bullet has a color.

**D - fBulletHasSize (1 bit):** A bit that specifies whether the bullet has a size.

**reserved (12 bits):** MUST be zero and MUST be ignored.

### TabStops

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)*,* [*TextRuler*](#Section_36b5f25afd5d4db18735dcb06a84fe30)

A structure that specifies tab stops.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| count | | | | | | | | | | | | | | | | rgTabStop (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**count (2 bytes):** An unsigned integer that specifies the count of tab stops in **rgTabStop**.

**rgTabStop (variable):** An array of [TabStop](#Section_2b8ecabd6a6f426c9eecc1623611a1e8) that specifies the tab stops. The length, in bytes, of the array is specified by the following formula:

1. **count** \* 4

### TabStop

*Referenced by:* [*TabStops*](#Section_89ee352d52194cf29a562a67fe85b201)

A structure that specifies a tab stop.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| position | | | | | | | | | | | | | | | | type | | | | | | | | | | | | | | | |

**position (2 bytes):** A **signed integer** that specifies an offset, in [**master units**](#gt_b70408ee-a21b-477f-afe9-e73c6fdb4bdb), of the tab stop.

If the [TextPFException](#Section_c15a13b3db2c4b50a7e608045581a663) record that contains this **TabStop** structure also contains a **leftMargin**, then the value of **position** is relative to the left margin of the paragraph; otherwise, the value is relative to the left side of the paragraph.

If a [TextRuler](#Section_36b5f25afd5d4db18735dcb06a84fe30) record contains this **TabStop** structure, the value is relative to the left side of the text ruler.

**type (2 bytes):** A [**TextTabTypeEnum**](#Section_b4e867fbbd7a4f97a5c8127693a442dc) enumeration that specifies how text aligns at the tab stop.

### PFWrapFlags

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

A structure that specifies line breaking settings for a paragraph.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | reserved | | | | | | | | | | | | |

**A - charWrap (1 bit):** A bit that specifies whether the paragraph follows the East Asian text line breaking settings specified by the **KinsokuContainer** (section [2.9.2](#Section_d22fdfcfb0334a9ab4beabc379ad0039)) and **Kinsoku9Container** (section [2.9.6](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)) records.

**B - wordWrap (1 bit):** A bit that specifies whether text wraps from one line to the next only at word breaks, or in the middle of a word. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| **TRUE** | Text wraps at word breaks. All of the characters of a word exist on the same line. |
| **FALSE** | Text wraps at character breaks. Characters of a word can be split across lines. |

**C - overflow (1 bit):** A bit that specifies whether hanging punctuation is allowed for East Asian text.

**reserved (13 bits):** MUST be zero and MUST be ignored.

### TextPFException9

*Referenced by:* [*StyleTextProp9*](#Section_fb67da927dd849649e44b8b92291ee87)*,* [*TextDefaults9Atom*](#Section_ab49e0370973424eb155250559a98723)*,* [*TextMasterStyle9Level*](#Section_adfd57bc4c134f27854fce73ddbcd0c0)

A structure that specifies additional paragraph-level formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| masks | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bulletBlipRef (optional) | | | | | | | | | | | | | | | | fBulletHasAutoNumber (optional) | | | | | | | | | | | | | | | |
| bulletAutoNumberScheme (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**masks (4 bytes):** A [PFMasks](#Section_2a02831a088b44e784c9c185ab314a71) structure that specifies which fields in this **TextPFException9** exist. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **masks.hasBullet** | MUST be zero. |
| **masks.bulletHasFont** | MUST be zero. |
| **masks.bulletHasColor** | MUST be zero. |
| **masks.bulletHasSize** | MUST be zero. |
| **masks.bulletFont** | MUST be zero. |
| **masks.bulletColor** | MUST be zero. |
| **masks.bulletSize** | MUST be zero. |
| **masks.bulletChar** | MUST be zero. |
| **masks.leftMargin** | MUST be zero. |
| **masks.indent** | MUST be zero. |
| **masks.align** | MUST be zero. |
| **masks.lineSpacing** | MUST be zero. |
| **masks.spaceBefore** | MUST be zero. |
| **masks.spaceAfter** | MUST be zero. |
| **masks.defaultTabSize** | MUST be zero. |
| **masks.fontAlign** | MUST be zero. |
| **masks.charWrap** | MUST be zero. |
| **masks.wordWrap** | MUST be zero. |
| **masks.overflow** | MUST be zero. |
| **masks.tabStops** | MUST be zero. |
| **masks.textDirection** | MUST be zero. |

**bulletBlipRef (2 bytes):** An optional [BlipRef](#Section_402ab14f12cf4df197aae6120f082bc7) that specifies a picture to use as a bullet for this paragraph. It MUST exist if and only if **masks.bulletBlip** is **TRUE**.

**fBulletHasAutoNumber (2 bytes):** An optional **signed integer** that specifies whether this paragraph has an automatic numbering scheme. It MUST exist if and only if **masks.bulletHasScheme** is **TRUE**. It MUST be a value from the following table.

| Field | Meaning |
| --- | --- |
| 0x0000 | This paragraph does not have an automatic numbering scheme. |
| 0x0001 | This paragraph has an automatic numbering scheme. |

**bulletAutoNumberScheme (4 bytes):** An optional [TextAutoNumberScheme](#Section_161f5b5d336545eb9b1c0bf8a7190287) structure that specifies the automatic numbering scheme for this paragraph. It MUST exist if and only if **masks.bulletScheme** is **TRUE**.

### TextAutoNumberScheme

*Referenced by:* [*TextPFException9*](#Section_3e80f159dab6415da40918ea6975b0c9)

A structure that specifies the automatic numbering scheme for text paragraphs.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| scheme | | | | | | | | | | | | | | | | startNum | | | | | | | | | | | | | | | |

**scheme (2 bytes):** A [**TextAutoNumberSchemeEnum**](#Section_45509009f8f14d81836a2de06839d4ac) enumeration that specifies the scheme. The scheme describes the style of the number bullets.

**startNum (2 bytes):** A **signed integer** that specifies the numeric value of the first number assigned. It MUST be greater than or equal to 0x0001.

### DefaultRulerAtom

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the default ruler and corresponding options.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| defaultTextRuler (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_DefaultRulerAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**defaultTextRuler (variable):** A [TextRuler](#Section_36b5f25afd5d4db18735dcb06a84fe30) structure that specifies the default text ruler. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **defaultTextRuler.fDefaultTabSize** | MUST be **TRUE**. |
| **defaultTextRuler.fCLevels** | MUST be **TRUE**. |
| **defaultTextRuler.fTabStops** | MUST be **TRUE**. |
| **defaultTextRuler.fLeftMargin1** | MUST be **TRUE**. |
| **defaultTextRuler.fLeftMargin2** | MUST be **TRUE**. |
| **defaultTextRuler.fLeftMargin3** | MUST be **TRUE**. |
| **defaultTextRuler.fLeftMargin4** | MUST be **TRUE**. |
| **defaultTextRuler.fLeftMargin5** | MUST be **TRUE**. |
| **defaultTextRuler.fIndent1** | MUST be **TRUE**. |
| **defaultTextRuler.fIndent2** | MUST be **TRUE**. |
| **defaultTextRuler.fIndent3** | MUST be **TRUE**. |
| **defaultTextRuler.fIndent4** | MUST be **TRUE**. |
| **defaultTextRuler.fIndent5** | MUST be **TRUE**. |

### TextRulerAtom

*Referenced by:* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**text ruler**](#gt_10194e3c-32a4-4796-9f16-e56347c3395d).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textRuler (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextRulerAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**textRuler (variable):** A [TextRuler](#Section_36b5f25afd5d4db18735dcb06a84fe30) structure that specifies a text ruler.

### TextRuler

*Referenced by:* [*DefaultRulerAtom*](#Section_f126079c590540fbb2d70f478adb44b8)*,* [*TextRulerAtom*](#Section_e8487b82d9664193a6752b39f4adf647)

A structure that specifies tabbing, margins, and indentation for text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | E | F | G | H | I | J | K | L | M | reserved | | | | | | | | | | | | | | | | | | |
| cLevels (optional) | | | | | | | | | | | | | | | | defaultTabSize (optional) | | | | | | | | | | | | | | | |
| tabs (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| leftMargin1 (optional) | | | | | | | | | | | | | | | | indent1 (optional) | | | | | | | | | | | | | | | |
| leftMargin2 (optional) | | | | | | | | | | | | | | | | indent2 (optional) | | | | | | | | | | | | | | | |
| leftMargin3 (optional) | | | | | | | | | | | | | | | | indent3 (optional) | | | | | | | | | | | | | | | |
| leftMargin4 (optional) | | | | | | | | | | | | | | | | indent4 (optional) | | | | | | | | | | | | | | | |
| leftMargin5 (optional) | | | | | | | | | | | | | | | | indent5 (optional) | | | | | | | | | | | | | | | |

**A - fDefaultTabSize (1 bit):** A bit that specifies whether **defaultTabSize** exists.

**B - fCLevels (1 bit):** A bit that specifies whether **cLevels** exists.

**C - fTabStops (1 bit):** A bit that specifies whether **tabs** exists.

**D - fLeftMargin1 (1 bit):** A bit that specifies whether **leftMargin1** exists.

**E - fLeftMargin2 (1 bit):** A bit that specifies whether **leftMargin2** exists.

**F - fLeftMargin3 (1 bit):** A bit that specifies whether **leftMargin3** exists.

**G - fLeftMargin4 (1 bit):** A bit that specifies whether **leftMargin4** exists.

**H - fLeftMargin5 (1 bit):** A bit that specifies whether **leftMargin5** exists.

**I - fIndent1 (1 bit):** A bit that specifies whether **indent1** exists.

**J - fIndent2 (1 bit):** A bit that specifies whether **indent2** exists.

**K - fIndent3 (1 bit):** A bit that specifies whether **indent3** exists.

**L - fIndent4 (1 bit):** A bit that specifies whether **indent4** exists.

**M - fIndent5 (1 bit):** A bit that specifies whether **indent5** exists.

**reserved (19 bits):** MUST be zero and MUST be ignored.

**cLevels (2 bytes):** An optional signed integer that specifies the number of style levels in this [**text ruler**](#gt_10194e3c-32a4-4796-9f16-e56347c3395d). It MUST exist if and only if **fCLevels** is **TRUE**.

**defaultTabSize (2 bytes):** An optional [TabSize](#Section_8b1533a8e2104bcebb11fdb1301a27bc) that specifies the default tab size for this text ruler. It MUST exist if and only if **fDefaultTabSize** is **TRUE**.

**tabs (variable):** An optional [TabStops](#Section_89ee352d52194cf29a562a67fe85b201) structure that specifies the tab stops for this text ruler. It MUST exist if and only if **fTabStops** is **TRUE**.

**leftMargin1 (2 bytes):** An optional [MarginOrIndent](#Section_ab67e36095f442289b23fea825377c95) that specifies the left margin for text that has an [IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) equal to 0x0000. It MUST exist if and only if **fLeftMargin1** is **TRUE**.

**indent1 (2 bytes):** An optional MarginOrIndent that specifies the indentation for text that has an IndentLevel equal to 0x0000. It MUST exist if and only if **fIndent1** is **TRUE**.

**leftMargin2 (2 bytes):** An optional MarginOrIndent that specifies the left margin for text that has an IndentLevel equal to 0x0001. It MUST exist if and only if **fLeftMargin2** is **TRUE**.

**indent2 (2 bytes):** An optional MarginOrIndent that specifies the indentation for text that has an IndentLevel equal to 0x0001. It MUST exist if and only if **fIndent2** is **TRUE**.

**leftMargin3 (2 bytes):** An optional MarginOrIndent that specifies the left margin for text that has an IndentLevel equal to 0x0002. It MUST exist if and only if **fLeftMargin3** is **TRUE**.

**indent3 (2 bytes):** An optional MarginOrIndent that specifies the indentation for text that has an IndentLevel equal to 0x0002. It MUST exist if and only if **fIndent3** is **TRUE**.

**leftMargin4 (2 bytes):** An optional MarginOrIndent that specifies the left margin for text that has an IndentLevel equal to 0x0003. It MUST exist if and only if **fLeftMargin4** is **TRUE**.

**indent4 (2 bytes):** An optional MarginOrIndent that specifies the indentation for text that has an IndentLevel equal to 0x0003. It MUST exist if and only if **fIndent4** is **TRUE**.

**leftMargin5 (2 bytes):** An optional MarginOrIndent that specifies the left margin for text that has an IndentLevel equal to 0x0004. It MUST exist if and only if **fLeftMargin5** is **TRUE**.

**indent5 (2 bytes):** An optional MarginOrIndent that specifies the indentation for text that has an IndentLevel equal to 0x0004. It MUST exist if and only if **fIndent5** is **TRUE**.

### TextSIExceptionAtom

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies default settings for language and spelling information.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textSIException (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextSpecialInfoDefaultAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**textSIException (variable):** A [TextSIException](#Section_c4be3fe8ac2d42b485bb2647078f4c53) structure that specifies default settings for language and spelling information. The length, in bytes, of the field is specified by **rh.recLen**. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **textSIException.fPp10ext** | MUST be zero. |
| **textSIException.fBidi** | MUST be zero. |
| **textSIException.smartTag** | MUST be zero. |

### TextSIException

*Referenced by:* [*StyleTextProp11*](#Section_4d3465183db8487fb2a8a1e41035f628)*,* [*StyleTextProp9*](#Section_fb67da927dd849649e44b8b92291ee87)*,* [*TextSIExceptionAtom*](#Section_4713a7ea63624fd88231a32637a6c3d2)*,* [*TextSIRun*](#Section_bc49480fbe724f1ab8e1708ee109cb1f)

A structure that specifies additional text properties.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | D | E | F | G | H | I | J | reserved2 | | | | | | | | | | | | | | | | | | | | | |
| spellInfo (optional) | | | | | | | | | | | | | | | | lid (optional) | | | | | | | | | | | | | | | |
| altLid (optional) | | | | | | | | | | | | | | | | bidi (optional) | | | | | | | | | | | | | | | |
| K (optional) | | | | reserved3 (optional) | | | | | | | | | | | | | | | | | | | | | | | | | | | L (optional) |
| smartTags (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**A - spell (1 bit):** A bit that specifies whether the **spellInfo** field exists.

**B - lang (1 bit):** A bit that specifies whether the **lid** field exists.

**C - altLang (1 bit):** A bit that specifies whether the **altLid** field exists.

**D - unused1 (1 bit):** Undefined and MUST be ignored.

**E - unused2 (1 bit):** Undefined and MUST be ignored.

**F - fPp10ext (1 bit):** A bit that specifies whether the **pp10runid**, **reserved3**, and **grammarError** fieldsexist**.**

**G - fBidi (1 bit):** A bit that specifies whether the **bidi** field exists.

**H - unused3 (1 bit):** Undefined and MUST be ignored.

**I - reserved1 (1 bit):** MUST be zero and MUST be ignored.

**J - smartTag (1 bit):** A bit that specifies whether the **smartTags** field exists.

**reserved2 (22 bits):** MUST be zero and MUST be ignored.

**spellInfo (2 bytes):** An optional [SpellingFlags](#Section_c878a17b61f745a893e2499c5f8034cb) structure that specifies the spelling status of this text. It MUST exist if and only if **spell** is **TRUE**. The **spellInfo.grammar** sub-field MUST be zero.

**lid (2 bytes):** An optional [TxLCID](#Section_118aee24b6cd415cbc7e756ea0dfcd2d) that specifies the language identifier of this text. It MUST exist if and only if **lang** is **TRUE**.

**altLid (2 bytes):** An optional TxLCID that specifies the alternate language identifier of this text. It MUST exist if and only if **altLang** is **TRUE**.

**bidi (2 bytes):** An optional signed integer that specifies whether the text contains bidirectional characters. It MUST exist if and only if **fBidi** is **TRUE**. It MUST be a value from the following table:

| Value | Meaning |
| --- | --- |
| 0x0000 | Contains no bidirectional characters. |
| 0x0001 | Contains bidirectional characters. |

**K - pp10runid (4 bits):** An optional unsigned integer that specifies an identifier for a character run that contains StyleTextProp11 data. It MUST exist if and only if **fPp10ext** is **TRUE**.

**reserved3 (27 bits):** An optional unsigned integer that MUST be zero, and MUST be ignored. It MUST exist if and only if **fPp10ext** is **TRUE**.

**L - grammarError (1 bit):** An optional bit that specifies a grammar error. It MUST exist if and only if **fPp10ext** is **TRUE**.

**smartTags (variable):** An optional [SmartTags](#Section_30a82ae1f03e405790d5fe1c7e69b744) structure that specifies [**smart tags**](#gt_2f57a49a-d503-4605-8798-0e53bd637609) applied to the text. It MUST exist if and only if **smartTag** is **TRUE**.

### SpellingFlags

*Referenced by:* [*TextSIException*](#Section_c4be3fe8ac2d42b485bb2647078f4c53)

A structure that specifies the spelling status of a run of text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| A | B | C | reserved | | | | | | | | | | | | |

**A - error (1 bit):** A bit that specifies whether the text is spelled incorrectly.

**B - clean (1 bit):** A bit that specifies whether the text needs rechecking.

**C - grammar (1 bit):** A bit that specifies whether the text has a grammar error.

**reserved (13 bits):** MUST be zero and MUST be ignored.

### SmartTags

*Referenced by:* [*TextSIException*](#Section_c4be3fe8ac2d42b485bb2647078f4c53)

A structure that specifies the [**smart tags**](#gt_2f57a49a-d503-4605-8798-0e53bd637609) attached to a run of text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSmartTagIndex (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**count (4 bytes):** An unsigned integer specifies the count of items in **rgSmartTagIndex.**

**rgSmartTagIndex (variable):** An array of [SmartTagIndex](#Section_9ab29cb27b03495b94b704cd42c076f4) that specifies the indices. The count of items in the array is specified by **count**.

### TextMasterStyleAtom

*Referenced by:* [*DocumentTextInfoContainer*](#Section_6a08728e04f84cc1831773cefa178870)*,* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the character-level and paragraph-level formatting of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

If this **TextMasterStyleAtom** is contained in a **MainMasterContainer** record (section 2.5.3), character-level and paragraph-level formatting not specified by this **TextMasterStyleAtom** record inherit from the **TextMasterStyleAtom** record contained in the **DocumentTextInfoContainer** record (section 2.9.1).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cLevels | | | | | | | | | | | | | | | | lstLvl1 (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl2 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl3 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl4 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl5 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | Specifies the type of text to which the formatting applies. It MUST be a [**TextTypeEnum**](#Section_50118cd348c243299a406a0281e960b6) enumeration value. |
| **rh.recType** | MUST be an [RT\_TextMasterStyleAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**cLevels (2 bytes):** An **unsigned integer** that specifies the number of style levels. It MUST be less than or equal to 0x0005.

**lstLvl1 (variable):** An optional [TextMasterStyleLevel](#Section_b033d0f4aa9643dca333835849858f1f) structure that specifies the master formatting for text that has an [IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) equal to 0x0000. It MUST exist if and only if **cLevels** is greater than 0x0000.

**lstLvl2 (variable):** An optional TextMasterStyleLevel structure that specifies the master formatting for text that has an IndentLevel equal to 0x0001. It MUST exist if and only if **cLevels** is greater than 0x0001.

**lstLvl3 (variable):** An optional TextMasterStyleLevel structure that specifies the master formatting for text that has an IndentLevel equal to 0x0002. It MUST exist if and only if **cLevels** is greater than 0x0002.

**lstLvl4 (variable):** An optional TextMasterStyleLevel structure that specifies the master formatting for text that has an IndentLevel equal to 0x0003. It MUST exist if and only if **cLevels** is greater than 0x0003.

**lstLvl5 (variable):** An optional TextMasterStyleLevel structure that specifies the master formatting for text that has an IndentLevel equal to 0x0004. It MUST exist if and only if **cLevels** is greater than 0x0004.

### TextMasterStyleLevel

*Referenced by:* [*TextMasterStyleAtom*](#Section_5febad270c484f98b655562b986f5874)

A structure that specifies character-level and paragraph-level formatting for a style level.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| level (optional) | | | | | | | | | | | | | | | | pf (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**level (2 bytes):** An optional **unsigned integer** that specifies to what style level this **TextMasterStyleLevel** applies. This field MUST exist if and only if the **rh.recInstance** field of the TextMasterStyleAtom record that contains this **TextMasterStyleLevel** structure is greater than or equal to 0x005. If the field exists, its value MUST be less than the **cLevels** field of the TextMasterStyleAtom record that contains this **TextMasterStyleLevel** structure.

**pf (variable):** A [TextPFException](#Section_c15a13b3db2c4b50a7e608045581a663) structure that specifies paragraph-level formatting.

**cf (variable):** A [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) structure that specifies character-level formatting.

### TextMasterStyle9Atom

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)*,* [*PP9SlideBinaryTagExtension*](#Section_0ee9570b80ec46f0889aec42dad58baf)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional character-level and paragraph-level formatting of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

If this **TextMasterStyle9Atom** is contained in a **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), character-level and paragraph-level formatting not specified by this **TextMasterStyle9Atom** record inherit from the **TextMasterStyle9Atom** records contained in the PP9DocBinaryTagExtension record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cLevels | | | | | | | | | | | | | | | | lstLvl1 (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl2 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl3 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl4 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl5 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | Specifies the type of text to which the formatting applies. It MUST be a [**TextTypeEnum**](#Section_50118cd348c243299a406a0281e960b6) enumeration value. |
| **rh.recType** | MUST be an [RT\_TextMasterStyle9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**cLevels (2 bytes):** An **unsigned integer** that specifies the number of style levels. It MUST be less than or equal to 0x0005.

**lstLvl1 (variable):** An optional [TextMasterStyle9Level](#Section_adfd57bc4c134f27854fce73ddbcd0c0) structure that specifies additional master formatting for text that has an [IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) equal to 0x0000. It MUST exist if and only if **cLevels** is greater than 0x0000.

**lstLvl2 (variable):** An optional TextMasterStyle9Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0001. It MUST exist if and only if **cLevels** is greater than 0x0001.

**lstLvl3 (variable):** An optional TextMasterStyle9Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0002. It MUST exist if and only if **cLevels** is greater than 0x0002.

**lstLvl4 (variable):** An optional TextMasterStyle9Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0003. It MUST exist if and only if **cLevels** is greater than 0x0003.

**lstLvl5 (variable):** An optional TextMasterStyle9Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0004. It MUST exist if and only if **cLevels** is greater than 0x0004.

### TextMasterStyle9Level

*Referenced by:* [*TextMasterStyle9Atom*](#Section_7e0b6a7e059145769dd02305bd8c0323)

A structure that specifies additional character-level and paragraph level-formatting for a style level.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| pf9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**pf9 (variable):** A [TextPFException9](#Section_3e80f159dab6415da40918ea6975b0c9) structure that specifies paragraph-level formatting.

**cf9 (variable):** A [TextCFException9](#Section_589af75ae0c34592b1f29471a0fa24a3) structure that specifies character-level formatting.

### TextMasterStyle10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)*,* [*PP10SlideBinaryTagExtension*](#Section_ccb82f60e1ae4379b1e000909bb70b17)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional character-level formatting of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

If this **TextMasterStyle10Atom** is contained in a **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), character-level formatting not specified by this **TextMasterStyle10Atom** record inherits from the **TextMasterStyle10Atom** records contained in the PP10DocBinaryTagExtension record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cLevels | | | | | | | | | | | | | | | | lstLvl1 (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl2 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl3 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl4 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| lstLvl5 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | Specifies the type of text to which the formatting applies. It MUST be a [**TextTypeEnum**](#Section_50118cd348c243299a406a0281e960b6) enumeration value. |
| **rh.recType** | MUST be an [RT\_TextMasterStyle10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**cLevels (2 bytes):** An unsigned integer that specifies the number of style levels. It MUST be less than or equal to 0x0005.

**lstLvl1 (variable):** An optional [TextMasterStyle10Level](#Section_e32c88b5ce1a4a8282c13c740433a04a) structure that specifies additional master formatting for text that has an [IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) equal to 0x0000. It MUST exist if and only if **cLevels** is greater than 0x0000.

**lstLvl2 (variable):** An optional TextMasterStyle10Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0001. It MUST exist if and only if **cLevels** is greater than 0x0001.

**lstLvl3 (variable):** An optional TextMasterStyle10Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0002. It MUST exist if and only if **cLevels** is greater than 0x0002.

**lstLvl4 (variable):** An optional TextMasterStyle10Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0003. It MUST exist if and only if **cLevels** is greater than 0x0003.

**lstLvl5 (variable):** An optional TextMasterStyle10Level structure that specifies additional master formatting for text that has an IndentLevel equal to 0x0004. It MUST exist if and only if **cLevels** is greater than 0x0004.

### TextMasterStyle10Level

*Referenced by:* [*TextMasterStyle10Atom*](#Section_72dd8636450c451fa60d9faddcff72be)

A structure that specifies additional character-level formatting for a style level.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| cf10 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**cf10 (variable):** A [TextCFException10](#Section_77fea531e8394bc9b8137adc3f2adea0) structure that specifies additional character-level formatting.

### TextHeaderAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the type of a text body. The presence of this atom indicates a text body whose properties are specified by other atom and container records that follow. The records comprising this text body continue up until the next **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) or the next **TextHeaderAtom** record that follows this **TextHeaderAtom** or the end of the **rgChildRec** array of the [OfficeArtClientTextBox](#Section_f50070dda4dc4edda446c4fcc5c80ace) or **SlideListWithTextContainer** (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)) record that contains this **TextHeaderAtom**.

Let the *corresponding slide* be specified by one of the following:

* When this **TextHeaderAtom** is contained in a **SlideListWithTextContainer** record, let the *corresponding slide* be the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) as specified by the **SlidePersistAtom** record that most closely precedes this **TextHeaderAtom** record.
* When this **TextHeaderAtom** is contained in a **SlideContainer** record, let the *corresponding slide* be specified by the **SlideContainer** record that contains this **TextHeaderAtom** record.
* When this **TextHeaderAtom** is contained in a **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)), let the *corresponding slide* be specified by the **SlideContainer** record referred to by the **notesAtom.slideIdRef** field of the **NotesContainer** record that contains this **TextHeaderAtom** record.

Let the *corresponding main master* be specified by the **MainMasterContainer** record (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) specified by the **slideAtom.masterIdRef** field of the *corresponding slide.*

Let the *corresponding shape* be specified by one of the following:

* When this **TextHeaderAtom** record is contained in a **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14), let the *corresponding shape* be the **OfficeArtSpContainer** record that contains this **TextHeaderAtom** record.
* When this **TextHeaderAtom** record is contained in a **SlideListWithTextContainer** record, let the *corresponding shape* be specified by the **OfficeArtSpContainer** record ([MS-ODRAW] section 2.2.14) contained in the *corresponding slide* that contains an [OutlineTextRefAtom](#Section_f120afe11b654deca2cec5f90fe8b317) record that refers to this **TextHeaderAtom** record.

The characters of the text body are specified by the [TextCharsAtom](#Section_a3c5c8d5e5304167a2427743bc99aeac) record or the [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) record, if any, that follows this **TextHeaderAtom** record. In addition, the text body contains a single terminating paragraph break character (0x000D) that is not included in the TextCharsAtom record or TextBytesAtom record.

Let the *corresponding text style*, if any, be specified by the [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) record that follows this **TextHeaderAtom**.

The text body contains a sequence of character runs comprised of consecutive characters with identical [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) record data as specified by the [TextCfRun](#Section_426f313aa4f34ffba0419a74ccf23f17) structures in the **rgTextCfRun** array of the *corresponding text style*.

Let the *corresponding text placeholder list* be as specified in the **SlideListWithTextContainer** record that contains this **TextHeaderAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | Specifies whether this **TextHeaderAtom** record specifies the text of a placeholder shape. It MUST be greater than or equal to 0x000 and less than or equal to 0x005.  When this **TextHeaderAtom** record is contained in a **SlideListWithTextContainer** record, this field specifies the index of an item in the *corresponding text placeholder list*.  When this **TextHeaderAtom** record is contained in an OfficeArtClientTextbox record, this field MUST be 0x000. |
| **rh.recType** | MUST be [RT\_TextHeaderAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**textType (4 bytes):** A [**TextTypeEnum**](#Section_50118cd348c243299a406a0281e960b6) enumeration that specifies the type of the text body.

### TextCharsAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies Unicode characters.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textChars (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextCharsAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be even. |

**textChars (variable):** An array of UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) characters that specifies the characters of the *corresponding text*. The length, in bytes, of the array is specified by **rh.recLen**. The array MUST NOT contain the NUL character 0x0000.

### TextBytesAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies Unicode characters.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textBytes (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextBytesAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**textBytes (variable):** An array of bytes that specifies the characters of the *corresponding text*.Each item represents the low byte of a UTF-16 Unicode [[RFC2781]](https://go.microsoft.com/fwlink/?LinkId=90380) character whose high byte is 0x00. The length, in bytes, of the array is specified by **rh.recLen**. The array MUST NOT contain a 0x00 byte.

### StyleTextPropAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies character-level and paragraph-level formatting.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this record.

Let the *corresponding shape* be as specified in the *corresponding text*.

Let the *corresponding main master* be as specified in the *corresponding text*.

If the *corresponding shape* is a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), character-level and paragraph-level formatting not specified by this StyleTextPropAtom record inherit from the [TextMasterStyleAtom](#Section_5febad270c484f98b655562b986f5874) records contained in the *corresponding main master*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTextPFRun (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgTextCFRun (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_StyleTextPropAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgTextPFRun (variable):** An array of [TextPFRun](#Section_4e95a4f9a9af42b5b81af8f991cb1418) structures that specifies paragraph-level formatting for the *corresponding text*. The **count** field of each TextPFRun item specifies the number of characters to which the formatting applies, starting with the character at the zero-based index equal to the sum of the **count** fields of all previous TextPFRun records in the array.

The sum of the **count** fields of the TextPFRun items MUST be equal to the number of characters in the *corresponding text*.

**rgTextCFRun (variable):** An array of [TextCFRun](#Section_426f313aa4f34ffba0419a74ccf23f17) structures that specifies character-level formatting for the *corresponding text*. The **count** field of each TextCFRun specifies the number of characters to which the formatting applies, starting with the character at the zero-based index equal to the sum of the **count** fields of all previous TextCFRun records in the array.

The sum of the **count** fields of the TextCFRun items MUST be equal to the number of characters in the *corresponding text*.

### TextPFRun

*Referenced by:* [*StyleTextPropAtom*](#Section_a9a5fa71238d491eacc7fa1fffd5f100)

A structure that specifies the paragraph-level formatting of a run of text.

Let the *corresponding text* be as specified in the StyleTextPropAtom record that contains this **TextPFRun** structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| indentLevel | | | | | | | | | | | | | | | | pf (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**count (4 bytes):** An unsigned integer that specifies the number of characters of the *corresponding text* to which this paragraph formatting applies.

**indentLevel (2 bytes):**  An [IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) that specifies the indentation level of the paragraph.

**pf (variable):** A [TextPFException](#Section_c15a13b3db2c4b50a7e608045581a663) structure that specifies paragraph-level formatting. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **masks.leftMargin** | MUST be **FALSE**. |
| **masks.indent** | MUST be **FALSE**. |
| **masks.defaultTabSize** | MUST be **FALSE**. |
| **masks.tabStops** | MUST be **FALSE**. |

### TextCFRun

*Referenced by:* [*StyleTextPropAtom*](#Section_a9a5fa71238d491eacc7fa1fffd5f100)

A structure that specifies the character-level formatting of a run of text.

Let the *corresponding text* be as specified in the StyleTextPropAtom record that contains this **TextCFRun** structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**count (4 bytes):** An unsigned integer that specifies the number of characters of the correspondingtext to which this character formatting applies.

**cf (variable):** A [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) structure that specifies character-level formatting.

### SlideNumberMCAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a slide number metacharacter.

The metacharacter is replaced by the slide number on which the metacharacter is found.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **SlideNumberMCAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_SlideNumberMetaCharAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**position (4 bytes):**  A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the position of the metacharacter in the *corresponding text*.

### HeaderMCAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a header metacharacter.

The metacharacter is replaced by the text in the *corresponding header*.

Let the *corresponding header* be specified by the [HeaderAtom](#Section_bdda477db94d4a4ebe1c35f78f68821c) record contained in the **NotesHeadersFootersContainer** record (section [2.4.15.6](#Section_58fe42d1259e4f809a342567c565125e)) for the handout slide or the notes slide.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **HeaderMCAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_HeaderMetaCharAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**position (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the position of the header metacharacter in the *corresponding text*.

### FooterMCAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a footer metacharacter.

The metacharacter is replaced by the text in the *corresponding footer*.

Let the *corresponding footer* be specified by the [FooterAtom](#Section_be36887533e9490db832954eb800a240) record contained in the **SlideHeadersFootersContainer** record (section [2.4.15.1](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)) for presentation slides, the **NotesHeadersFootersContainer** record (section [2.4.15.6](#Section_58fe42d1259e4f809a342567c565125e)) for handout slides and notes slides, or in the [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) record for each slide.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **FooterMCAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_FooterMetaCharAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**position (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the position of the metacharacter in the *corresponding text*.

### DateTimeMCAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a datetime metacharacter.

The metacharacter is replaced by the current datetime. Current datetime is formatted in the style that is specified by the **index** field.

Let the corresponding text be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **DateTimeMCAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| index | | | | | | | | unused | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_DateTimeMetaCharAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**position (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the position of the metacharacter in the *corresponding text*.

**index (1 byte):** An unsigned byte that specifies the **Format ID** used to stylize datetime. The identifier specified by the **Format ID** is converted based on the LCID [[MS-LCID]](%5bMS-LCID%5d.pdf#Section_70feba9f294e491eb6eb56532684c37f) into a value or string as specified in the following tables. The LCID is specified in **TextSIException.lid**. If no valid LCID is found in **TextSIException.lid, TextSIException.altLid** (if it exists)is used. If, in the following tables, the converted **Format ID** is a value, it specifies the format index (specified in [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.4.4.1) that is used to style the datetime. If, in the following tables, the converted Format ID is a string, that string is used as the style to format the datetime. The value MUST be greater than or equal to 0x0 and MUST be less than or equal to 0xC.

**LCID: American (0x0409)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 8 |
| 3 | 2 |
| 4 | 5 |
| 5 | 9 |
| 6 | 10 |
| 7 | 11 |
| 8 | 12 |
| 9 | 15 |
| 10 | 16 |
| 11 | 13 |
| 12 | 14 |

**LCID: British (0x0809) / Australian (0x0C09)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | "d MMMM, yyy" |
| 3 | 2 |
| 4 | 5 |
| 5 | 9 |
| 6 | 10 |
| 7 | 11 |
| 8 | 12 |
| 9 | 15 |
| 10 | 16 |
| 11 | 13 |
| 12 | 14 |

**LCID: Japanese (0x0411)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 4 |
| 1 | 8 |
| 2 | 7 |
| 3 | 3 |
| 4 | 0 |
| 5 | 9 |
| 6 | 5 |
| 7 | 11 |
| 8 | 12 |
| 9 | "HH:mm" |
| 10 | "HH:mm:ss" |
| 11 | 15 |
| 12 | 16 |

**LCID: Taiwan (0x0404)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 3 |
| 3 | 7 |
| 4 | 12 |
| 5 | 9 |
| 6 | 10 |
| 7 | 4 |
| 8 | 11 |
| 9 | "HH:mm" |
| 10 | "HH:mm:ss" |
| 11 | "H:mm AMPM" |
| 12 | "H:mm:ss AMPM" |

**LCID: China (0x0804)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 2 |
| 4 | 4 |
| 5 | 9 |
| 6 | 5 |
| 7 | "\x79\x79\x79\x79\x5E74\x4D\x6708\x64\x65E5\x68\x65F6\x6D\x5206" |
| 8 | "\x79\x79\x79\x79\x5E74\x4D\x6708\x64\x65E5\x661F  \x671f\x57\x68\x65F6\x6D\x5206\x73\x79D2" |
| 9 | "HH:mm" |
| 10 | "HH:mm:ss" |
| 11 | "\x41\x4D\x50\x4D\x68\x65F6\x6D\x5206" |
| 12 | "\x41\x4D\x50\x4D\x68\x65F6\x6D\x5206\x73\x79D2" |

**LCID: Korean (0x0412)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 6 |
| 3 | 3 |
| 4 | 4 |
| 5 | 10 |
| 6 | 7 |
| 7 | 12 |
| 8 | 11 |
| 9 | "HH:mm" |
| 10 | "HH:mm:ss" |
| 11 | 13 |
| 12 | 14 |

**LCID: Arabic (0x0401)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 8 |
| 7 | 7 |
| 8 | 8 |
| 9 | 1 |
| 10 | 10 |
| 11 | 11 |
| 12 | 5 |

**LCID: Hebrew (0x040D)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 6 |
| 4 | 11 |
| 5 | 5 |
| 6 | 12 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 | 1 |
| 11 | 11 |
| 12 | 6 |

**LCID: Swedish (0x041D)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 3 |
| 3 | 2 |
| 4 | 7 |
| 5 | 9 |
| 6 | 10 |
| 7 | 11 |
| 8 | 12 |
| 9 | 15 |
| 10 | 16 |
| 11 | 13 |
| 12 | 14 |

**LCID: Singapore (0x1004) / Macao SAR (0x1404) / Hong Kong SAR (0x0C04)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 3 |
| 3 | 2 |
| 4 | 4 |
| 5 | 9 |
| 6 | 5 |
| 7 | "\x79\x79\x79\x79\x5E74\x4D\x6708\x64\x65E5\x68\x65F6\x6D\x5206" |
| 8 | "\x79\x79\x79\x79\x5E74\x4D\x6708\x64\x65E5\x661F  \x671f\x57\x68\x65F6\x6D\x5206\x73\x79D2" |
| 9 | "HH:mm" |
| 10 | "HH:mm:ss" |
| 11 | "\x41\x4D\x50\x4D\x68\x65F6\x6D\x5206" |
| 12 | "\x41\x4D\x50\x4D\x68\x65F6\x6D\x5206\x73\x79D2" |

**LCID: Thai (0x41E)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 5 |
| 5 | 6 |
| 6 | 7 |
| 7 | 8 |
| 8 | 9 |
| 9 | 10 |
| 10 | 11 |
| 11 | 13 |
| 12 | 14 |

**LCID: Vietnamese (0x042A)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 5 |
| 5 | 6 |
| 6 | 10 |
| 7 | 11 |
| 8 | 12 |
| 9 | 13 |
| 10 | 14 |
| 11 | 15 |
| 12 | 16 |

**LCID: Hindi (0x0439)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 1 |
| 1 | 2 |
| 2 | 3 |
| 3 | 5 |
| 4 | 7 |
| 5 | 11 |
| 6 | 13 |
| 7 | 0 |
| 8 | 1 |
| 9 | 5 |
| 10 | 10 |
| 11 | 11 |
| 12 | 14 |

**LCID: Syriac (0x045A)**

| Format ID | Converted value/string |
| --- | --- |
| 0 | 0 |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |
| 9 | 9 |
| 10 | 10 |
| 11 | 11 |
| 2 | 12 |

**unused (3 bytes):** Undefined and MUST be ignored.

### GenericDateMCAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a datetime metacharacter.

The metacharacter is replaced by the datetime option specified in the [HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082) record.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **GenericDateMCAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_GenericDateMetaCharAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004 |

**position (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the position of the metacharacter in the *corresponding text*.

### RTFDateTimeMCAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a Rich Text Format (RTF) datetime metacharacter. RTF format is specified by [[MSFT-RTF]](https://go.microsoft.com/fwlink/?LinkId=120924).

The metacharacter is replaced by the datetime, using the format specified in the format string in this metacharacter.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **RTFDateTimeMCAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| position | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| format (128 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RtfDateTimeMetaCharAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000084. |

**position (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the position of the metacharacter in the *corresponding text*.

**format (128 bytes):** A [char2](#Section_2bd860f7f6144ed0a0ad5520e82856b7) that specifies the date and time format in RTF.

### TextBookmarkAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a range of text that has a [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c). The length of the range of text is specified by the following formula:

1. end - begin

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| begin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| end | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bookmarkID | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextBookmarkAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x0000000C. |

**begin (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the beginning of the bookmarked range.

**end (4 bytes):** A TextPosition that specifies the end of the bookmarked range. This field MUST be greater than **begin** and SHOULD[<107>](#Appendix_A_107" \o "Product behavior note 107) be less than or equal to **begin** plus 255.

**bookmarkID (4 bytes):** An unsigned integer that specifies a reference to a bookmark identifier. It MUST be the same as the **bookmarkID** field of a [BookmarkEntityAtom](#Section_a2f2dfbe96e6466eb37b3310416a47ec) record.

### TextSpecialInfoAtom

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional text properties.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgSIRun (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextSpecialInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgSIRun (variable):** An array of [TextSIRun](#Section_bc49480fbe724f1ab8e1708ee109cb1f) structures that specifies additional text properties for the *corresponding text*. The **count** field of each TextSIRun specifies the number of characters to which the properties apply, starting with the character at the zero-based index equal to the sum of the **count** fields of all previous TextSIRun records in the array.

The sum of the **count** fields of the TextSIRun items MUST be equal to the number of characters in the *corresponding text*. The length, in bytes, of the array is specified by **rh.recLen**.

### TextSIRun

*Referenced by:* [*TextSpecialInfoAtom*](#Section_382afea69dc34b6c820611abef8b8366)

A structure that specifies language and spelling information for a run of text.

Let the *corresponding text* be as specified in the TextSpecialInfoAtom record that contains this **TextSIRun** structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| si (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**count (4 bytes):** An **unsigned integer** that specifies the number of characters of the correspondingtext to which these additional text properties apply. It MUST be greater than or equal to 0x00000001.

**si (variable):** A [TextSIException](#Section_c4be3fe8ac2d42b485bb2647078f4c53) structure that specifies language and spelling information.

### TextInteractiveInfoInstance

*Referenced by:* [*SlideListWithTextSubContainerOrAtom*](#Section_fc198575e6fc420f86936714469eb710)*,* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

A variable type record whose type and meaning are dictated by the value of **rh.recInstance**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x000 | A [MouseClickTextInteractiveInfoAtom](#Section_1efdc2bfa11d40928128147b3602be87) record that specifies the corresponding text range of the preceding [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) record. |
| 0x001 | A [MouseOverTextInteractiveInfoAtom](#Section_93a2cd280426415da67fec6f3f781a09) record that specifies the corresponding text range of the preceding [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) record. |

### MouseClickTextInteractiveInfoAtom

*Referenced by:* [*TextInteractiveInfoInstance*](#Section_824e7fc09f994135b1f30fbd5597f5fd)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a text range that anchors the preceding [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) record in the containing [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record or **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)).

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **MouseClickTextInteractiveInfoAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextInteractiveInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**range (8 bytes):** A [TextRange](#Section_7bdc8284595a40c29a2f5245c1fda304) structure that specifies the anchor in the *corresponding text*.

### MouseOverTextInteractiveInfoAtom

*Referenced by:* [*TextInteractiveInfoInstance*](#Section_824e7fc09f994135b1f30fbd5597f5fd)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a text range that anchors the preceding [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) record in the containing [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record or **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)).

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **MouseOverTextInteractiveInfoAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| range | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_TextInteractiveInfoAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**range (8 bytes):** A [TextRange](#Section_7bdc8284595a40c29a2f5245c1fda304) structure that specifies the anchor in the *corresponding text*.

### TextRange

*Referenced by:* [*MouseClickTextInteractiveInfoAtom*](#Section_1efdc2bfa11d40928128147b3602be87)*,* [*MouseOverTextInteractiveInfoAtom*](#Section_93a2cd280426415da67fec6f3f781a09)

A structure that specifies a range of text.

Let the *corresponding text* be as specified in the MouseClickTextInteractiveInfoAtom record or the MouseOverTextInteractiveInfoAtom record that contains this **TextRange** structure.

The range specified MUST be valid for the *corresponding text*. The length of the range of text is specified by the following formula:

1. end - begin

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| begin | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| end | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**begin (4 bytes):** A [TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) that specifies the first position of the range. It MUST be greater than or equal to zero and MUST be less than or equal to the length of the *corresponding text*.

**end (4 bytes):** A TextPosition that specifies the cutoff position for the range. The character before this position is the last character in the range. It MUST be greater than **begin** and MUST be less than or equal to the length of the *corresponding text*.

### OutlineTextProps9Container

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies additional text properties for outline text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgOutlineTextProps9Entry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_OutlineTextProps9](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgOutlineTextProps9Entry (variable):** An array of [OutlineTextProps9Entry](#Section_e0d2c3b5c038439caaaee778a1c36c71) structures that specifies the text properties. The size, in bytes, of the array is specified by **rh.recLen**.

### OutlineTextProps9Entry

*Referenced by:* [*OutlineTextProps9Container*](#Section_6eb16c7f6b6848dbace37347326b3a9d)

A structure that specifies additional text properties for a single [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) position on a slide.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| outlineTextHeaderAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| styleTextProp9Atom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**outlineTextHeaderAtom (16 bytes):** An [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) record that specifies to which placeholder shape position and slide the **styleTextProp9Atom** field applies.

**styleTextProp9Atom (variable):** A [StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f) record that specifies additional text properties.

### OutlineTextPropsHeaderExAtom

*Referenced by:* [*OutlineTextProps10Entry*](#Section_c7cff0baf7494282975f565a7601b0d4)*,* [*OutlineTextProps11Entry*](#Section_0411bcbf955d4ae8a51a27128d8a04e1)*,* [*OutlineTextProps9Entry*](#Section_e0d2c3b5c038439caaaee778a1c36c71)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to text contained in the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)).

Let the *corresponding slide persist* be specified by the **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) contained in the **SlideListWithTextContainer** record whose **slideId** field is equal to **slideIdRef**.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record referenced by **rh.recInstance**.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| txType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | Specifies a zero-based index into the sequence of TextHeaderAtom records that follows the *corresponding slide persist*. It MUST be greater than or equal to 0x000 and less than the number of TextHeaderAtom records that follow the *corresponding slide persist*. It MUST be less than or equal to 0x005. |
| **rh.recType** | MUST be [RT\_OutlineTextPropsHeader9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**slideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies the [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) that contains the *corresponding text*. If this field does not reference a valid presentation slide, the structure that contains this **OutlineTextPropsHeaderExAtom** MUST be ignored.

**txType (4 bytes):** A [**TextTypeEnum**](#Section_50118cd348c243299a406a0281e960b6) enumeration that specifies the type of text of the *corresponding text*.

### OutlineTextProps10Container

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies additional text properties for outline text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgOutlineTextProps10Entry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_OutlineTextProps10](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgOutlineTextProps10Entry (variable):** An array of [OutlineTextProps10Entry](#Section_c7cff0baf7494282975f565a7601b0d4) structures that specifies the text properties. The size, in bytes, of the array is specified by **rh.recLen**.

### OutlineTextProps10Entry

*Referenced by:* [*OutlineTextProps10Container*](#Section_6efc6c99ea7546fc8b36ea94a8e3077f)

A structure that specifies additional text properties for a single [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) position on a slide.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| outlineTextHeaderAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| styleTextProp10Atom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**outlineTextHeaderAtom (16 bytes):** An [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) record that specifies to which placeholder shape position and slide the **styleTextProp10Atom** field applies.

**styleTextProp10Atom (variable):** A [StyleTextProp10Atom](#Section_663f260adf984185b4fdf092d3826548) record that specifies additional text properties.

### OutlineTextProps11Container

*Referenced by:* [*PP11DocBinaryTagExtension*](#Section_662c3a59f11d4d3fb472c695b4e598a8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies additional text properties for outline text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgOutlineTextProps11Entry (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_OutlineTextProps11](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgOutlineTextProps11Entry (variable):** An array of [OutlineTextProps11Entry](#Section_0411bcbf955d4ae8a51a27128d8a04e1) structures that specifies the text properties. The size, in bytes, of the array is specified by **rh.recLen**.

### OutlineTextProps11Entry

*Referenced by:* [*OutlineTextProps11Container*](#Section_bd93329d5087408e99027355d31ec82e)

A structure that specifies additional text properties for a single [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) position on a slide.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| outlineTextHeaderAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| styleTextProp11Atom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**outlineTextHeaderAtom (16 bytes):** An [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) record that specifies to which placeholder shape position and slide the **styleTextProp11Atom** field applies

**styleTextProp11Atom (variable):** A [StyleTextProp11Atom](#Section_b0e6e86508654d1bb5d3a2a805725915) record that specifies additional text properties.

### StyleTextProp9Atom

*Referenced by:* [*OutlineTextProps9Entry*](#Section_e0d2c3b5c038439caaaee778a1c36c71)*,* [*PP9ShapeBinaryTagExtension*](#Section_288d4b7c200a4fbfbfcbe60adba13db8)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional text formatting.

When this record is contained in an OutlineTextProps9Entry structure, let the *corresponding text* be as specified in the [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) record contained in the OutlineTextProps9Entry structure that contains this **StyleTextProp9Atom** record.

When this record is contained in a PP9ShapeBinaryTagExtension record, let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record contained in the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) that contains this **StyleTextProp9Atom** record.

Let the *corresponding shape* be as specified in the *corresponding text*.

Let the *corresponding main master* be as specified in the *corresponding text*.

If the *corresponding shape* is a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), character-level and paragraph-level formatting not specified by this **StyleTextProp9Atom** record inherit from the [TextMasterStyle9Atom](#Section_7e0b6a7e059145769dd02305bd8c0323) records contained in the *corresponding main master*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgStyleTextProp9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_StyleTextProp9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgStyleTextProp9 (variable):** An array of [StyleTextProp9](#Section_fb67da927dd849649e44b8b92291ee87) structures that specifies additional formatting for the *corresponding text*. Each item in the array specifies formatting for a sequence of consecutive character runs of the *corresponding text* that share the same value of the **fontStyle.pp9rt** field of the [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) record. If a TextCFException record does not specify a **fontStyle.pp9rt** field, its value is assumed to be 0x0000. An item at index *i* MUST be ignored if i % 16 is not equal to the value of the **fontstyle.pp9rt** field of the next such sequence. The length, in bytes, of the array is specified by **rh.recLen**.

### StyleTextProp9

*Referenced by:* [*StyleTextProp9Atom*](#Section_b046e29f7ff04ac69456b014d812748f)

A structure that specifies additional paragraph-level formatting, character-level formatting, and text properties for a text run.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| pf9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| si (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**pf9 (variable):** A [TextPFException9](#Section_3e80f159dab6415da40918ea6975b0c9) structure that specifies additional paragraph-level formatting.

**cf9 (variable):** A [TextCFException9](#Section_589af75ae0c34592b1f29471a0fa24a3) structure that specifies additional character-level formatting.

**si (variable):** A [TextSIException](#Section_c4be3fe8ac2d42b485bb2647078f4c53) structure that specifies additional text properties. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **masks.spell** | MUST be 0. |
| **masks.lang** | MUST be 0. |
| **masks.altLang** | MUST be 0. |
| **masks.smartTag** | MUST be 0. |

### StyleTextProp10Atom

*Referenced by:* [*OutlineTextProps10Entry*](#Section_c7cff0baf7494282975f565a7601b0d4)*,* [*PP10ShapeBinaryTagExtension*](#Section_a5850b953d584723b94902c802af528d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional character-level formatting.

When this record is contained in an OutlineTextProps10Entry structure, let the *corresponding text* be as specified in the [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) record contained in the OutlineTextProps10Entry structure that contains this **StyleTextProp10Atom** record.

When this record is contained in a PP10ShapeBinaryTagExtension record, let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record contained in the OfficeArtSpContainer ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) that contains this **StyleTextProp10Atom** record.

Let the *corresponding shape* be as specified in the *corresponding text*.

Let the *corresponding main master* be as specified in the *corresponding text*.

If the *corresponding shape* is a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), character-level formatting not specified by this **StyleTextProp10Atom** record inherits from the [TextMasterStyle10Atom](#Section_72dd8636450c451fa60d9faddcff72be) records contained in the *corresponding main master*.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgStyleTextProp10 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_StyleTextProp10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgStyleTextProp10 (variable):** An array of [TextCFException10](#Section_77fea531e8394bc9b8137adc3f2adea0) structures that specifies additional character-level formatting for the *corresponding text*. Each item in the array specifies formatting for a sequence of consecutive character runs that share the same value of the **pp10runid** field of the [TextCFException9](#Section_589af75ae0c34592b1f29471a0fa24a3) structure, as specified by the [StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f) record that refers to the same *corresponding text*. If a TextCFException9 structure does not contain the **pp10runid** field, its value is assumed to be 0x0000. An item at index *i* MUST be ignored if i % 16 is not equal to the value of the **pp10runid** field of the next such sequence. The length, in bytes, of the array is specified by **rh.recLen**.

### StyleTextProp11Atom

*Referenced by:* [*OutlineTextProps11Entry*](#Section_0411bcbf955d4ae8a51a27128d8a04e1)*,* [*PP11ShapeBinaryTagExtension*](#Section_ab3d45de5d374cd69bece6983b085ad9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional text properties.

When this record is contained in an OutlineTextProps11Entry structure, let the *corresponding text* be as specified in the [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) record contained in the OutlineTextProps11Entry structure that contains this **StyleTextProp11Atom** record.

When this record is contained in a PP11ShapeBinaryTagExtension record, let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record contained in the OfficeArtSpContainer ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) that contains this **StyleTextProp11Atom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgStyleTextProp11 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_StyleTextProp11Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgStyleTextProp11 (variable):** An array of [StyleTextProp11](#Section_4d3465183db8487fb2a8a1e41035f628) structures that specifies smart tags for the *corresponding text*. Each item specifies properties for a sequence of characters until the beginning or end of the next smart tag. An item at index *i* MUST be ignored if i % 16 is not equal to the value of the **si.pp10runid** field of the [StyleTextProp9](#Section_fb67da927dd849649e44b8b92291ee87) record that refers to the same characters. If the StyleTextProp9 record does not contain a **si.pp10runid** field, its value is assumed to be 0x0000.

### StyleTextProp11

*Referenced by:* [*StyleTextProp11Atom*](#Section_b0e6e86508654d1bb5d3a2a805725915)

A structure that specifies additional text properties.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| info (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**info (variable):** A [TextSIException](#Section_c4be3fe8ac2d42b485bb2647078f4c53) structure that specifies additional text properties for a text run. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **info.spell** | MUST be zero. |
| **info.lang** | MUST be zero. |
| **info.altLang** | MUST be zero. |
| **info.fPp10ext** | MUST be zero. |
| **info.fBidi** | MUST be zero. |

### BlipCollection9Container

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about picture bullet points.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgBlipEntityAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_BlipCollection9](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgBlipEntityAtom (variable):** An array of [BlipEntityAtom](#Section_f1aeacfe24af425c8bb13333b4f8e7f6) record that specifies picture bullets. It MUST NOT contain more than one BlipEntityAtom record with the same value of **rh.recInstance**. The size, in bytes, of the array is specified by **rh.recLen**.

### BlipEntityAtom

*Referenced by:* [*BlipCollection9Container*](#Section_8a93931e05c148be8824deb1c4489c14)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a picture bullet.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| winBlipType | | | | | | | | unused | | | | | | | | blip (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | An **unsigned integer** that specifies a zero-based index of a picture bullet within the collection of picture bullets specified by **BlipCollection9Container** (section 2.9.72). It MUST be greater than or equal to 0x000 and less than or equal to 0x080. |
| **rh.recType** | MUST be an [RT\_BlipEntity9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**winBlipType (1 byte):** An **unsigned integer** that specifies the preferred picture type. It MUST be one of the values in the following table.

| Value | Meaning |
| --- | --- |
| 0x02 | Windows Enhanced Metafile [[MS-EMF]](%5bMS-EMF%5d.pdf#Section_91c257d7c39d4a369b1f63e3f73d30ca) |
| 0x03 | Windows Metafile [[MS-WMF]](%5bMS-WMF%5d.pdf#Section_4813e7fd52d04f42965f228c8b7488d2) |
| 0x05 | JPEG [[JFIF]](https://go.microsoft.com/fwlink/?LinkId=89925) |
| 0x06 | PNG [[RFC2083]](https://go.microsoft.com/fwlink/?LinkId=90313) |

**unused (1 byte):** Undefined and MUST be ignored.

**blip (variable):** An **OfficeArtBStoreContainerFileBlock** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.22) that specifies the picture data for the picture bullet.

### TextDefaults9Atom

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional default character-level and paragraph-level formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pf9 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextDefaults9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**cf9 (variable):** A [TextCFException9](#Section_589af75ae0c34592b1f29471a0fa24a3) structure that specifies default character-level formatting.

**pf9 (variable):** A [TextPFException9](#Section_3e80f159dab6415da40918ea6975b0c9) structure that specifies default paragraph-level formatting.

### TextDefaults10Atom

*Referenced by:* [*PP10DocBinaryTagExtension*](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional default character-level formatting.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cf10 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_TextDefaults10Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**cf10 (variable):** A [TextCFException10](#Section_77fea531e8394bc9b8137adc3f2adea0) structure that specifies additional font information.

### OfficeArtClientTextbox

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies text related data for a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** An **OfficeArtRecordHeader** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.1) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be 0xF00D. |

**rgChildRec (variable):** An array of [TextClientDataSubContainerOrAtom](#Section_5e90593583704c55a3f9ddf0e143d276) records that specifies text-related data. The size, in bytes, of the array is specified by **rh.recLen**. The sequence of the **rh.recType** fields of the array items MUST be a valid OfficeArtClientTextBoxAtoms as specified in the following ABNF (specified in [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096)) grammar:

1. OfficeArtClientTextBoxAtoms = OutlineAtom / ([RT\_TextHeaderAtom](#Section_38fb1fa50a62477a8b14178df22de812) [RT\_TextCharsAtom / RT\_TextBytesAtom]TextStylePropAtom MetaCharAtom TextBookAtom TextSpecialInfoAtom InteractiveAtom TextOrMaster)
2. OutlineAtom = RT\_OutlineTextRefAtom [RT\_TextRulerAtom]
3. TextStylePropAtom = \*1(RT\_StyleTextPropAtom / RT\_MasterTextPropAtom)
4. MetaCharAtom = \*(RT\_SlideNumberMetaCharAtom / RT\_DateTimeMetaCharAtom / RT\_GenericDateMetaCharAtom / RT\_HeaderMetaCharAtom / RT\_FooterMetaCharAtom / RT\_RtfDateTimeMetaCharAtom)
5. TextBookAtom = \*RT\_TextBookmarkAtom
6. TextSpecialInfoAtom = \*1RT\_TextSpecialInfoAtom
7. InteractiveAtom = \*(RT\_InteractiveInfo RT\_TextInteractiveInfoAtom)
8. TextOrMaster = \*(RT\_TextRulerAtom / RT\_MasterTextPropAtom)

### TextClientDataSubContainerOrAtom

*Referenced by:* [*OfficeArtClientTextbox*](#Section_f50070dda4dc4edda446c4fcc5c80ace)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_OutlineTextRefAtom](#Section_38fb1fa50a62477a8b14178df22de812) | An [OutlineTextRefAtom](#Section_f120afe11b654deca2cec5f90fe8b317) record that specifies a reference to a [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record contained in the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)). The TextHeaderAtom record specifies the text for the shape that contains this record. |
| RT\_TextHeaderAtom | A TextHeaderAtom record that specifies the type of a body of text. |
| RT\_TextCharsAtom | A [TextCharsAtom](#Section_a3c5c8d5e5304167a2427743bc99aeac) record that specifies text characters. |
| RT\_TextBytesAtom | A [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) record that specifies text characters. |
| RT\_StyleTextPropAtom | A [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) record that specifies text character and paragraph properties. |
| RT\_SlideNumberMetaCharAtom | A [SlideNumberMCAtom](#Section_3f61519995ec48c0acb4dd98f0f29560) record that specifies a slide number metacharacter. |
| RT\_DateTimeMetaCharAtom | A [DateTimeMCAtom](#Section_668ab84bf0b24496af11b9d1b04e840a) record that specifies a datetime metacharacter. |
| RT\_GenericDateMetaCharAtom | A [GenericDateMCAtom](#Section_a212a37760444ec2a5948c59be237125) record that specifies a generic date metacharacter. |
| RT\_HeaderMetaCharAtom | A [HeaderMCAtom](#Section_d7ed28bf83ef45e5a57b2384f8b03423) record that specifies a header metacharacter. |
| RT\_FooterMetaCharAtom | A [FooterMCAtom](#Section_5a2fa1e2bc5f450b89d0b372a811313a) record that specifies a footer metacharacter. |
| RT\_RtfDateTimeMetaCharAtom | A [RTFDateTimeMCAtom](#Section_7aa3736d15cf43b38b450dddf856d946) record that specifies an RTF datetime metacharacter. |
| RT\_TextBookmarkAtom | A [TextBookmarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1) record that specifies a text [**bookmark**](#gt_42f9c2f4-8a4b-4d64-a0e1-fc071debdf4c). |
| RT\_TextSpecialInfoAtom | A [TextSpecialInfoAtom](#Section_382afea69dc34b6c820611abef8b8366) record that specifies additional text properties. |
| RT\_InteractiveInfo | An [InteractiveInfoInstance](#Section_9225f32d5eb146b38ebd442bffded30d) record that specifies text interactive information. |
| RT\_TextInteractiveInfoAtom | A [TextInteractiveInfoInstance](#Section_824e7fc09f994135b1f30fbd5597f5fd) record that specifies the anchor for text interactive information. |
| RT\_TextRulerAtom | A [TextRulerAtom](#Section_e8487b82d9664193a6752b39f4adf647) record that specifies a text ruler. |
| RT\_MasterTextPropAtom | A [MasterTextPropAtom](#Section_c80e1825db844e21a3d717068b1248c2) record that specifies style properties for text on a master slide. |

### OutlineTextRefAtom

*Referenced by:* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a reference to text contained in the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)). Let the *corresponding slide persist* be specified by the **SlidePersistAtom** record (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) contained in the **SlideListWithTextContainer** record whose **persistIdRef** field refers to the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) that contains this **OutlineTextRefAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| index | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_OutlineTextRefAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**index (4 bytes):**  A **signed integer** that specifies a zero-based index into the sequence of [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) records that follows the *corresponding slide persist*. It MUST be greater than or equal to 0x00000000 and less than the number of TextHeaderAtom records that follow the *corresponding slide persist*.

### MasterTextPropAtom

*Referenced by:* [*TextClientDataSubContainerOrAtom*](#Section_5e90593583704c55a3f9ddf0e143d276)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the indent levels for the text.

Let the *corresponding text* be specified by the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record that most closely precedes this **MasterTextPropAtom** record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgMasterTextPropRun (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_MasterTextPropAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**rgMasterTextPropRun (variable):** An array of [MasterTextPropRun](#Section_1454a4e7ef70445588261652b46394dd) structures that specifies indent levels. The **count** field of each MasterTextPropRun specifies the number of characters to which the indent level applies, starting with the character at the zero-based index equal to the sum of the **count** fields of all previous MasterTextPropRun items in the array.

The sum of the **count** fields of the array items MUST be equal to the number of characters in the *corresponding text*. The length, in bytes, of the array is specified by **rh.recLen**.

### MasterTextPropRun

*Referenced by:* [*MasterTextPropAtom*](#Section_c80e1825db844e21a3d717068b1248c2)

A structure that specifies the indent level for a text run.

Let the *corresponding text* be as specified in the MasterTextPropAtom record that contains this **MasterTextPropRun** structure.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| count | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| indentLevel | | | | | | | | | | | | | | | |

**count (4 bytes):** An unsigned integer that specifies the number of characters of the correspondingtext to which **indentLevel** applies.

**indentLevel (2 bytes):** An [IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) that specifies the indent level of the characters.

## External Object Types

### ExObjListContainer

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a list of [**external objects**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d) in the document.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exObjListAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgChildRec (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalObjectList](#Section_38fb1fa50a62477a8b14178df22de812). |

**exObjListAtom (12 bytes):** An [ExObjListAtom](#Section_ebd9be5b3df44c2c99ba84923f01a322) record that specifies list-specific properties.

**rgChildRec (variable):** An array of [ExObjListSubContainer](#Section_bc182153f27a4f5fb7e41ae1270ede28) records that specifies the external objects. The length, in bytes, of the array is specified by the following formula:

1. rh.recLen – 12.

### ExObjListSubContainer

*Referenced by:* [*ExObjListContainer*](#Section_3b997d4d79514478acc51c9adbc2627a)

A variable type record whose type and meaning are dictated by the value of **rh.recType**, as specified in the following table.

| Value | Meaning |
| --- | --- |
| [RT\_ExternalAviMovie](#Section_38fb1fa50a62477a8b14178df22de812) | An [ExAviMovieContainer](#Section_b434673370da4a3098d7b2e026d0d7cb) record that specifies an [**Audio Video Interleaved (AVI)**](#gt_e931aa24-eb5b-42e2-aeab-ce52562f6095) movie. |
| RT\_ExternalCdAudio | An [ExCDAudioContainer](#Section_fbe8267c2370443c9d6499b24d4248e9) record that specifies information about CD audio. |
| RT\_ExternalOleControl | An **ExControlContainer** record (section [2.10.10](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)) that specifies an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2). |
| RT\_ExternalHyperlink | An [ExHyperlinkContainer](#Section_3145d686e4e34eb2849f03c4cf410d42) record that specifies information about a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e). |
| RT\_ExternalMciMovie | An [ExMCIMovieContainer](#Section_e6094ce87fb74c91aa111a02f1ee03d8) record that specifies an [**MCI**](#gt_5699e1c6-693d-49eb-83d4-854886f0c40e) movie. |
| RT\_ExternalMidiAudio | An [ExMIDIAudioContainer](#Section_43c4d032436f4108a9ae4ea1d339db8b) record that specifies information about MIDI audio. |
| RT\_ExternalOleEmbed | An **ExOleEmbedContainer** record (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229)) that specifies an embedded [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096). |
| RT\_ExternalOleLink | An **ExOleLinkContainer** record (section [2.10.29](#Section_5311e92722f04e559f439142998efbd1)) that specifies a linked OLE object. |
| RT\_ExternalWavAudioEmbedded | An [ExWAVAudioEmbeddedContainer](#Section_2b70ee326217416b8841540f51f8e3af) record that specifies an embedded [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5) sound. |
| RT\_ExternalWavAudioLink | An [ExWAVAudioLinkContainer](#Section_e16f324952764f8fa4b4483f6aa08cf1) record that specifies a linked WAV sound. |

### ExObjListAtom

*Referenced by:* [*ExObjListContainer*](#Section_3b997d4d79514478acc51c9adbc2627a)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies properties for the containing **ExObjListContainer** record (section 2.10.1).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exObjIdSeed | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalObjectListAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**exObjIdSeed (4 bytes):** A signed integer that specifies a [**seed**](#gt_bed54e19-27e3-4341-8b0e-63132496e32f) for creating a new **ExObjId** (section [2.2.7](#Section_de24f7263ecb492d901b568a57c02eb4)) or **ExHyperlinkId** (section [2.2.5](#Section_42b7d88ae81644a385baad5586c7470e)) value. It MUST be greater than or equal to the largest **ExObjId** value in the file as specified by the **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) or **ExOleObjAtom** record (section [2.10.12](#Section_a35170168e3245859a42adae02eea798)) and MUST be greater than or equal to the largest **ExHyperlinkId** value in the file as specified by the **ExHyperlinkAtom** record (section [2.10.17](#Section_c760a33c472f449cb1db5dc5fe59ace1)). It MUST be greater than or equal to 0x00000001.

### ExAviMovieContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about an [**AVI**](#gt_e931aa24-eb5b-42e2-aeab-ce52562f6095) movie.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exVideo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalAviMovie](#Section_38fb1fa50a62477a8b14178df22de812). |

**exVideo (variable):** An [ExVideoContainer](#Section_342b66efd81d45c0aad3414545cb7ae4) record that specifies information about the AVI movie.

### ExVideoContainer

*Referenced by:* [*ExAviMovieContainer*](#Section_b434673370da4a3098d7b2e026d0d7cb)*,* [*ExMCIMovieContainer*](#Section_e6094ce87fb74c91aa111a02f1ee03d8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about external video data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exMediaAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| videoFilePathAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalVideo](#Section_38fb1fa50a62477a8b14178df22de812). |

**exMediaAtom (16 bytes):** An **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) that specifies information about the external video.

**videoFilePathAtom (variable):**  An optional [UncOrLocalPathAtom](#Section_b376f887227b4f538600fa036403ce05) record that specifies the UNC or local path to a video file. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 16.

### ExMediaAtom

*Referenced by:* [*ExCDAudioContainer*](#Section_fbe8267c2370443c9d6499b24d4248e9)*,* [*ExMIDIAudioContainer*](#Section_43c4d032436f4108a9ae4ea1d339db8b)*,* [*ExVideoContainer*](#Section_342b66efd81d45c0aad3414545cb7ae4)*,* [*ExWAVAudioEmbeddedContainer*](#Section_2b70ee326217416b8841540f51f8e3af)*,* [*ExWAVAudioLinkContainer*](#Section_e16f324952764f8fa4b4483f6aa08cf1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about external audio or video data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exObjId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | reserved | | | | | | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalMediaAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**exObjId (4 bytes):** An **ExObjId** (section [2.2.7](#Section_de24f7263ecb492d901b568a57c02eb4)) that specifies the identifier for the audio or video data.

**A - fLoop (1 bit):** A bit that specifies whether the audio or video data is repeated continuously during playback.

**B - fRewind (1 bit):** A bit that specifies whether the audio or video data is rewound after playing.

**C - fNarration (1 bit):** A bit that specifies whether the audio data is recorded narration for the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). It MUST be **FALSE** if this **ExMediaAtom** record is contained by an ExVideoContainer record.

**reserved (13 bits):**  MUST be zero and MUST be ignored.

**unused (2 bytes):** Undefined and MUST be ignored.

### UncOrLocalPathAtom

*Referenced by:* [*ExMIDIAudioContainer*](#Section_43c4d032436f4108a9ae4ea1d339db8b)*,* [*ExVideoContainer*](#Section_342b66efd81d45c0aad3414545cb7ae4)*,* [*ExWAVAudioLinkContainer*](#Section_e16f324952764f8fa4b4483f6aa08cf1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a UNC or local path to a file.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| path (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. |

**path (variable):** A [UncOrLocalPath](#Section_dd863c41d58d487381f39a6cb84a718c) that specifies the UNC or local path to a file. The length, in bytes, of the field is specified by **rh.recLen**.

### ExCDAudioContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about compact disc (CD) audio.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exMediaAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exCDAudioAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalCdAudio](#Section_38fb1fa50a62477a8b14178df22de812). |

**exMediaAtom (16 bytes):** An **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) that specifies information about the CD audio.

**exCDAudioAtom (16 bytes):** An [ExCDAudioAtom](#Section_4dfd1e1980134040848ea7ecdfa6bd00) record that specifies start and end information for the CD audio.

### ExCDAudioAtom

*Referenced by:* [*ExCDAudioContainer*](#Section_fbe8267c2370443c9d6499b24d4248e9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies start and end information for a CD audio clip.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| start | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| end | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_ExternalCdAudioAtom** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be 0x00000008. |

**start (4 bytes):** A [TmsfTimeStruct](#Section_013e697db1274c1db558c0aac04916d5) structure that specifies the beginning of the CD audio clip. It MUST be less than or equal to the value specified by **end**.

**end (4 bytes):** A TmsfTimeStruct structure that specifies the end of the CD audio clip. It MUST be greater than or equal to the value specified by **start**.

### ExControlContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exControlAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exOleObjAtom (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| menuNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| progIdAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clipboardNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| metafile (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleControl](#Section_38fb1fa50a62477a8b14178df22de812). |

**exControlAtom (12 bytes):** An [ExControlAtom](#Section_0a31df487ebb461a967e42003b8e91bd) record that specifies the identifying information for this ActiveX control.

**exOleObjAtom (32 bytes):** An **ExOleObjAtom** record (section [2.10.12](#Section_a35170168e3245859a42adae02eea798)) that specifies information about this ActiveX control as an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

**menuNameAtom (variable):** An optional [MenuNameAtom](#Section_39e69a141c4649deaab4ac78485c6de1) record that specifies the name to use in the user interface.

**progIdAtom (variable):** An optional [ProgIDAtom](#Section_4bfdd228254e40aba4970e0407079fd0) record that specifies the **ProgID** (described in[[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) of the ActiveX control.

**clipboardNameAtom (variable):** An optional [ClipboardNameAtom](#Section_203232fa72dd465b81cd48cda50d3865) record that specifies the name used by the user interface during copy and paste operations.

**metafile (variable):** An optional [MetafileBlob](#Section_743b32d37f84418091275d744ffb706b) record that specifies the icon for the ActiveX control.

### ExControlAtom

*Referenced by:* [*ExControlContainer*](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleControlAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**slideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies which [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) is associated with the ActiveX control.

### ExOleObjAtom

*Referenced by:* [*ExControlContainer*](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)*,* [*ExOleEmbedContainer*](#Section_c687090ca3594ffc918e415117e10229)*,* [*ExOleLinkContainer*](#Section_5311e92722f04e559f439142998efbd1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about [**OLE objects**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096). Each **ExOleObjAtom** MUST be referred to by exactly one [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| drawAspect | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| type | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exObjId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| subType | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| persistIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000018. |

**drawAspect (4 bytes):** A **DataViewAspectEnum** ([[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.2.1.2) that specifies the view aspect used to display the OLE object.

**type (4 bytes):** An [**ExOleObjTypeEnum**](#Section_e71fc7fb94a64feab7e657ddf07800bd) enumeration that specifies the type of OLE object.

**exObjId (4 bytes):** An **ExObjId** (section [2.2.7](#Section_de24f7263ecb492d901b568a57c02eb4)) that specifies a unique identifier for the OLE object.

**subType (4 bytes):** An [**ExOleObjSubTypeEnum**](#Section_9851ea47c044476a93026904de72d279) enumeration that specifies the sub-type of the OLE object.

**persistIdRef (4 bytes):** A **PersistIdRef** (section [2.2.21](#Section_7fbfdcc25bb148eeb886357d39fce18f)) that specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) to find the offset of an **ExOleObjStg** (section [2.10.34](#Section_21e29c16df3a435280172c48864d2548)) or an **ExControlStg** (section [2.10.37](#Section_dc8d8818de0e463e9f26a9bad364245d)).

**unused (4 bytes):** Undefined and MUST be ignored.

### MenuNameAtom

*Referenced by:* [*ExControlContainer*](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)*,* [*ExOleEmbedContainer*](#Section_c687090ca3594ffc918e415117e10229)*,* [*ExOleLinkContainer*](#Section_5311e92722f04e559f439142998efbd1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the short name of an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) or an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| menuName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**menuName (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the name. The length, in bytes, of the field is specified by **rh.recLen**.

### ProgIDAtom

*Referenced by:* [*ExControlContainer*](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)*,* [*ExOleEmbedContainer*](#Section_c687090ca3594ffc918e415117e10229)*,* [*ExOleLinkContainer*](#Section_5311e92722f04e559f439142998efbd1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the programmatic identifier of an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) or an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2). A **ProgID** (described in[[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977))**,** a programmatic identifier, is a string that uniquely identifies a class.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| progId (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x002. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**progId (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the **ProgID**. The length, in bytes, of the field is specified by **rh.recLen**.

### ClipboardNameAtom

*Referenced by:* [*ExControlContainer*](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)*,* [*ExOleEmbedContainer*](#Section_c687090ca3594ffc918e415117e10229)*,* [*ExOleLinkContainer*](#Section_5311e92722f04e559f439142998efbd1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the full descriptive class name of an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) or an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clipboardName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**clipboardName (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the full descriptive class name. The length, in bytes, of the field is specified by **rh.recLen**.

### ExHyperlinkContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exHyperlinkAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| friendlyNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| targetAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| locationAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalHyperlink](#Section_38fb1fa50a62477a8b14178df22de812). |

**exHyperlinkAtom (12 bytes):** An **ExHyperlinkAtom** record (section [2.10.17](#Section_c760a33c472f449cb1db5dc5fe59ace1)) that specifies information needed to identify this hyperlink.

**friendlyNameAtom (variable):** An optional [FriendlyNameAtom](#Section_e8e62224b3be43b9b97a658257d6af67) record that specifies the user- readable name of this hyperlink.

**targetAtom (variable):** An optional [TargetAtom](#Section_6a84616800154544a3c345f56e9577d8) record that specifies the full path of the destination file of this hyperlink.

**locationAtom (variable):** An optional [LocationAtom](#Section_6c05ffebaacd422bb931ec7b3e8b1ee3) record that specifies the location within the destination file of the hyperlink.

### ExHyperlinkAtom

*Referenced by:* [*ExHyperlinkContainer*](#Section_3145d686e4e34eb2849f03c4cf410d42)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the value needed to look up a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e) within the collection of external objects as specified by the **ExObjListContainer** record (section [2.10.1](#Section_3b997d4d79514478acc51c9adbc2627a)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exHyperlinkId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalHyperlinkAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**exHyperlinkId (4 bytes):** An **ExHyperlinkId** (section [2.2.5](#Section_42b7d88ae81644a385baad5586c7470e)) that specifies the identifier of this hyperlink.

### FriendlyNameAtom

*Referenced by:* [*ExHyperlinkContainer*](#Section_3145d686e4e34eb2849f03c4cf410d42)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the user-readable name of a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| friendlyName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**friendlyName (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the user-readable name. The length, in bytes, of the field is specified by **rh.recLen**.

### TargetAtom

*Referenced by:* [*ExHyperlinkContainer*](#Section_3145d686e4e34eb2849f03c4cf410d42)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the full path of the [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e) destination file.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| target (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**target (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the full path of the destination file. The length, in bytes, of the field is specified by **rh.recLen**.

### LocationAtom

*Referenced by:* [*ExHyperlinkContainer*](#Section_3145d686e4e34eb2849f03c4cf410d42)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the location of the [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e) within the destination file.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| location (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x003. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**location (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the location within the destination file. The length, in bytes, of the field is specified by **rh.recLen**.

### ExHyperlink9Container

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies additional information about a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exHyperlinkRefAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| screenTipAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exHyperlinkFlagsAtom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalHyperlink9](#Section_38fb1fa50a62477a8b14178df22de812). |

**exHyperlinkRefAtom (12 bytes):** An [ExHyperlinkRefAtom](#Section_37fa88095b274f9e95a669b633d191ea) record that specifies a reference to the corresponding hyperlink.

**screenTipAtom (variable):** An optional [ScreenTipAtom](#Section_d2e1c18127b841e088ef702c287fda1b) record that specifies the screen tip of the corresponding hyperlink.

**exHyperlinkFlagsAtom (12 bytes):** An [ExHyperlinkFlagsAtom](#Section_55f45d4439fd404095061f14878ce2ac) record that specifies additional information about the corresponding hyperlink.

### ExHyperlinkRefAtom

*Referenced by:* [*ExHyperlink9Container*](#Section_c021ee00af9c4673bd69e3d49f3668df)

An atom record that specifies a reference to a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exHyperlinkIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalHyperlinkAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**exHyperlinkIdRef (4 bytes):** An [ExHyperlinkIdRef](#Section_c2068363765343ecb8bb746532d66c6e) that specifies an identifier that references the corresponding hyperlink.

### ScreenTipAtom

*Referenced by:* [*ExHyperlink9Container*](#Section_c021ee00af9c4673bd69e3d49f3668df)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the screen tip of a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| screenTip (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**screenTip (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) that specifies the screen tip. The length, in bytes, of the field is specified by **rh.recLen**.

### ExHyperlinkFlagsAtom

*Referenced by:* [*ExHyperlink9Container*](#Section_c021ee00af9c4673bd69e3d49f3668df)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies additional information about a [**hyperlink**](#gt_dbe6a2d4-1841-4b4a-a9f6-562c6df7897e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | reserved | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalHyperlinkFlagsAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**A - fInsertHyperlinkDialog (1 bit):** A bit that specifies whether this hyperlink was created in the **Insert Hyperlink** dialog box.

**B - fLocationIsNamedShow (1 bit):** A bit that specifies whether the location of this hyperlink is a [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510).

**C - fNamedShowReturnToSlide (1 bit):** A bit that specifies whether this hyperlink to a named show was set to return to the slide.

**reserved (29 bits):** MUST be zero and MUST be ignored.

### ExMCIMovieContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about a movie stored externally as a [**Media Control Interface (MCI)**](#gt_5699e1c6-693d-49eb-83d4-854886f0c40e) file.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exVideo (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_ExternalMciMovie** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |

**exVideo (variable):** An [ExVideoContainer](#Section_342b66efd81d45c0aad3414545cb7ae4) record that specifies information about the MCI movie.

### ExMIDIAudioContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about audio stored externally as a [**Musical Instrument Digital Interface (MIDI)**](#gt_299f42fe-1fdc-4c81-91ed-607c9b119ce4) file.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exMediaAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| audioFilePathAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalMidiAudio](#Section_38fb1fa50a62477a8b14178df22de812). |

**exMediaAtom (16 bytes):** An **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) that specifies information about the external MIDI audio.

**audioFilePathAtom (variable):** An optional [UncOrLocalPathAtom](#Section_b376f887227b4f538600fa036403ce05) record that specifies the UNC or local path to a MIDI audio file. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 16.

### ExOleEmbedContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about an embedded [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exOleEmbedAtom (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exOleObjAtom (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| menuNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| progIdAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clipboardNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| metafile (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleEmbed](#Section_38fb1fa50a62477a8b14178df22de812). |

**exOleEmbedAtom (16 bytes):** An [ExOleEmbedAtom](#Section_003441ca0e10403b92c3ebcd7fcc6a07) record that specifies information about embedding an OLE object.

**exOleObjAtom (32 bytes):** An **ExOleObjAtom** record (section [2.10.12](#Section_a35170168e3245859a42adae02eea798)) that specifies information about the OLE object.

**menuNameAtom (variable):** An optional [MenuNameAtom](#Section_39e69a141c4649deaab4ac78485c6de1) record that specifies the name to use in the user interface.

**progIdAtom (variable):** An optional [ProgIDAtom](#Section_4bfdd228254e40aba4970e0407079fd0) record that specifies the **ProgID** (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) of the OLE object.

**clipboardNameAtom (variable):** An optional [ClipboardNameAtom](#Section_203232fa72dd465b81cd48cda50d3865) record that specifies the name used by the user interface during copy and paste operations.

**metafile (variable):** An optional [MetafileBlob](#Section_743b32d37f84418091275d744ffb706b) record that specifies the icon for the OLE object.

### ExOleEmbedAtom

*Referenced by:* [*ExOleEmbedContainer*](#Section_c687090ca3594ffc918e415117e10229)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies preferences for embedding an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exColorFollow | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| fCantLockServer | | | | | | | | fNoSizeToServer | | | | | | | | fIsTable | | | | | | | | unused | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleEmbedAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**exColorFollow (4 bytes):** An [**ExColorFollowEnum**](#Section_ebecbab3a3e34877a3bffabc10d90432) enumeration that specifies how the OLE object follows the color scheme of the containing document.

**fCantLockServer (1 byte):** A **bool1** (section [2.2.2](#Section_bab65619e61c4616aab01313e15978fb)) that specifies whether the [**OLE**](#gt_171744b8-3f44-4198-b7b9-1c0147282d2c) server for the embedded OLE object cannot be locked.

**fNoSizeToServer (1 byte):** A byte that specifies whether sending the OLE object dimensions to the OLE server can be omitted. It SHOULD[<108>](#Appendix_A_108" \o "Product behavior note 108) be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | Do send the dimensions to the OLE server. |
| 0x01 | Do not send the dimension to the OLE server. |

**fIsTable (1 byte):** A **bool1** that specifies whether the OLE object represents a table created by **ProgID** (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) **Word.Document**. It SHOULD[<109>](#Appendix_A_109" \o "Product behavior note 109) be ignored.

**unused (1 byte):** Undefined and MUST be ignored.

### ExOleLinkContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about a linked [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exOleLinkAtom (20 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exOleObjAtom (32 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| menuNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| progIdAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| clipboardNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| metafile (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleLink](#Section_38fb1fa50a62477a8b14178df22de812). |

**exOleLinkAtom (20 bytes):** An [ExOleLinkAtom](#Section_d14ae8e499c34847941c7d7c258f7691) record that specifies OLE object linking information.

**exOleObjAtom (32 bytes):** An **ExOleObjAtom** record (section [2.10.12](#Section_a35170168e3245859a42adae02eea798)) that specifies information about the linked OLE object.

**menuNameAtom (variable):** An optional [MenuNameAtom](#Section_39e69a141c4649deaab4ac78485c6de1) record that specifies the name to use in the user interface.

**progIdAtom (variable):** An optional [ProgIDAtom](#Section_4bfdd228254e40aba4970e0407079fd0) record that specifies the **ProgID** (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) of the OLE object.

**clipboardNameAtom (variable):** An optional [ClipboardNameAtom](#Section_203232fa72dd465b81cd48cda50d3865) record that specifies the name used by the user interface during copy and paste operations.

**metafile (variable):** An optional [MetafileBlob](#Section_743b32d37f84418091275d744ffb706b) record that specifies the icon for the OLE object.

### ExOleLinkAtom

*Referenced by:* [*ExOleLinkContainer*](#Section_5311e92722f04e559f439142998efbd1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about a linked [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| oleUpdateMode | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleLinkAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x0000000C. |

**slideIdRef (4 bytes):** A **SlideIdRef** (section [2.2.25](#Section_74a76957a2534455b8a4f82e650808fb)) that specifies the [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) associated with this OLE object.

**oleUpdateMode (4 bytes):** An **ObjectUpdateEnum** ([[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.2.1.1) that specifies how the OLE object is updated.

**unused (4 bytes):** Undefined and MUST be ignored.

### ExWAVAudioEmbeddedContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about embedded [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5) audio.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exMedia (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exWavAudioEmbedded (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalWavAudioEmbedded](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x20. |

**exMedia (16 bytes):** An **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) that specifies information about the WAV audio.

**exWavAudioEmbedded (16 bytes):** An [ExWAVAudioEmbeddedAtom](#Section_abc3f20816ed4945a8443eec428cc780) record that specifies information about an embedded WAV audio in the **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)).

### ExWAVAudioEmbeddedAtom

*Referenced by:* [*ExWAVAudioEmbeddedContainer*](#Section_2b70ee326217416b8841540f51f8e3af)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about an embedded [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5) audio.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundIdRef | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| soundLength | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x1. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_ExternalWavAudioEmbeddedAtom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**soundIdRef (4 bytes):** A [SoundIdRef](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) that specifies the value to look up in the **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)) to find the embedded audio.

**soundLength (4 bytes):** A signed integer that specifies the duration, in milliseconds, for which to play the audio. It MUST be greater than or equal to 0x00000000.

### ExWAVAudioLinkContainer

*Referenced by:* [*ExObjListSubContainer*](#Section_bc182153f27a4f5fb7e41ae1270ede28)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about external [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5) audio.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| exMedia (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| audioFilePathAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalWavAudioLink](#Section_38fb1fa50a62477a8b14178df22de812). |

**exMedia (16 bytes):** An **ExMediaAtom** record (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)) that specifies information about the external WAV audio.

**audioFilePathAtom (variable):** An optional [UncOrLocalPathAtom](#Section_b376f887227b4f538600fa036403ce05) record that specifies the UNC or local path to a WAV audio file. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen – 16.

### ExOleObjStg

A variable type record whose type and meaning are specified by the value of the **rh.recInstance** field of the contained storage, as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x000 | An [ExOleObjStgUncompressedAtom](#Section_23491dfff2694a5285129d7244d43cc8) record that specifies an uncompressed [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096). |
| 0x001 | An [ExOleObjStgCompressedAtom](#Section_305e541f2c9149c5a7424955330fd2b9) record that specifies a compressed OLE object. |

### ExOleObjStgUncompressedAtom

*Referenced by:* [*ExOleObjStg*](#Section_21e29c16df3a435280172c48864d2548)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies an uncompressed storage of an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| oleStgUncompressed (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectStg](#Section_38fb1fa50a62477a8b14178df22de812). |

**oleStgUncompressed (variable):** An array of bytes that specifies a structured storage (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) for the OLE object. The length, in bytes, of the field is specified by **rh.recLen.**

### ExOleObjStgCompressedAtom

*Referenced by:* [*ExOleObjStg*](#Section_21e29c16df3a435280172c48864d2548)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a compressed storage for an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| decompressedSize | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| oleStgCompressed (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectStg](#Section_38fb1fa50a62477a8b14178df22de812). |

**decompressedSize (4 bytes):** An **unsigned integer** that specifies the length, in bytes, of the storage after decompression.

**oleStgCompressed (variable):** An array of bytes that specifies a compressed structured storage (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) for the OLE object. The original bytes of the storage are compressed by the algorithm specified in [[RFC1950]](https://go.microsoft.com/fwlink/?LinkId=90301) and are decompressed by the algorithm specified in [[RFC1951]](https://go.microsoft.com/fwlink/?LinkId=90302). The length, in bytes, of the field is specified by the following formula:

1. rh.recLen – 4

### ExControlStg

A variable type record whose type and meaning are specified by the value of the record header member **rh.recInstance** of the contained storage, as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x000 | An [ExControlStgUncompressedAtom](#Section_5ce0969f14574174b6cf845915d4f564) record that specifies an uncompressed storage for an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2). |
| 0x001 | An [ExControlStgCompressedAtom](#Section_ed65e33859ad4e85ba8abad23a877120) record that specifies a compressed storage for an ActiveX control. |

### ExControlStgUncompressedAtom

*Referenced by:* [*ExControlStg*](#Section_dc8d8818de0e463e9f26a9bad364245d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the uncompressed storage of an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptControlStgUncompressed (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectStg](#Section_38fb1fa50a62477a8b14178df22de812). |

**pptControlStgUncompressed (variable):** An array of bytes that specifies a structured storage (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) for the ActiveX control. Office Forms ActiveX controls are specified in [[MS-OFORMS]](%5bMS-OFORMS%5d.pdf#Section_9c79701a8c3e4429a139b60ac3a1d50a). The length, in bytes, of the field is specified by **rh.recLen**.

### ExControlStgCompressedAtom

*Referenced by:* [*ExControlStg*](#Section_dc8d8818de0e463e9f26a9bad364245d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the compressed storage for an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| decompressedSize | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptControlStgCompressed (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectStg](#Section_38fb1fa50a62477a8b14178df22de812). |

**decompressedSize (4 bytes):** An unsigned integer that specifies the length, in bytes, of the storage after decompression.

**pptControlStgCompressed (variable):**  An array of bytes that specifies a compressed structured storage (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) for the ActiveX control. Office Forms ActiveX controls are specified in [[MS-OFORMS]](%5bMS-OFORMS%5d.pdf#Section_9c79701a8c3e4429a139b60ac3a1d50a). The original bytes of the storage are compressed by the algorithm specified in [[RFC1950]](https://go.microsoft.com/fwlink/?LinkId=90301) and are decompressed by the algorithm specified in [[RFC1951]](https://go.microsoft.com/fwlink/?LinkId=90302). The length, in bytes, of the field is specified by the following formula:

1. rh.recLen – 4.

### VbaProjectStg

A variable type record whose type and meaning are dictated by the value of the record header member **rh.recInstance** of the contained storage, as specified in the following table.

| Value | Meaning |
| --- | --- |
| 0x000 | A [VbaProjectStgUncompressedAtom](#Section_ca12ee80d3a6424f82ce56a927669fed) record that specifies uncompressed storage for a [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e). |
| 0x001 | A [VbaProjectStgCompressedAtom](#Section_03882002995a42f4997ce9d1dce888b1) record that specifies compressed storage for a VBA project. |

### VbaProjectStgUncompressedAtom

*Referenced by:* [*VbaProjectStg*](#Section_6c391284f2e14b90a93f780e6a8519ff)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the uncompressed structured storage (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) for a [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptVbaProjStgUncompressed (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectStg](#Section_38fb1fa50a62477a8b14178df22de812). |

**pptVbaProjStgUncompressed (variable):** An array of bytes that specifies a structured storage (described in [MSDN-COM]) for the VBA project ([[MS-OVBA]](%5bMS-OVBA%5d.pdf#Section_575462babf6741909facc275523c75fc) section 2.2.1). The length, in bytes, of the field is specified by **rh.recLen**.

### VbaProjectStgCompressedAtom

*Referenced by:* [*VbaProjectStg*](#Section_6c391284f2e14b90a93f780e6a8519ff)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about the compressed structured storage (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)) for a [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| decompressedSize | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| pptVbaProjStgCompressed (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an [RT\_ExternalOleObjectStg](#Section_38fb1fa50a62477a8b14178df22de812). |

**decompressedSize (4 bytes):** An unsigned integer that specifies the length of the storage after decompression.

**pptVbaProjStgCompressed (variable):** An array of bytes that specifies a compressed structured storage (described in [MSDN-COM]) for the VBA project as specified in [[MS-OVBA]](%5bMS-OVBA%5d.pdf#Section_575462babf6741909facc275523c75fc) section 2.2.1. The original bytes of the storage are compressed by the algorithm specified in [[RFC1950]](https://go.microsoft.com/fwlink/?LinkId=90301) and are decompressed by the algorithm specified in [[RFC1951]](https://go.microsoft.com/fwlink/?LinkId=90302). The length, in bytes, of the field is specified by the following formula:

1. rh.recLen - 4

## Other Types

### DocRoutingSlipAtom

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about a document [**routing slip**](#gt_8cedfe36-260c-416e-aeab-7fee4bdef9c3).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| length | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused1 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| recipientCount | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| currentRecipient | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | F | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused2 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| originatorString (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgRecipientRoutingSlipStrings (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| subjectString (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| messageString (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| unused3 (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_DocRoutingSlipAtom](#Section_38fb1fa50a62477a8b14178df22de812). |

**length (4 bytes):** An unsigned integer that specifies the length, in bytes, of the data contained in the document routing slip, including this field. It MUST be less than or equal to **rh.recLen**.

**unused1 (4 bytes):** Undefined and MUST be ignored.

**recipientCount (4 bytes):** An unsigned integer that specifies the count of strings in the collection of recipients specified by **rgRecipientRoutingSlipStrings**.

**currentRecipient (4 bytes):** An unsigned integer that specifies the addressee of the document routing slip. It MUST be less than or equal to **recipientCount**+1. A value of 0x00000000 or a value of **recipientCount**+1 specifies the originator identified by **originatorString**. A value greater than 0x00000000 and less than **recipientCount**+1 specifies a 1-based index into the collection of recipients specified by **rgRecipientRoutingSlipStrings**.

**A - fOneAfterAnother (1 bit):** A bit that specifies how a document is sent to recipients. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| **FALSE** | The document is sent from the originator to all recipients simultaneously. |
| **TRUE** | The document is sent sequentially to one recipient after another. After a recipient is finished processing the document, the document is sent to the next recipient. |

**B - fReturnWhenDone (1 bit):** A bit that specifies whether a document is sent back to the originator after all recipients have processed the document.

**C - fTrackStatus (1 bit):** A bit that specifies whether progress of a document routing slip is tracked. If progress is tracked, the originator is notified after a recipient finishes processing the document.

**D - reserved1 (1 bit):** MUST be zero, and MUST be ignored.

**E - fDocumentRouted (1 bit):** A bit that specifies whether the document-routing is in progress and the document is being processed by recipients.

**F - fCycleCompleted (1 bit):** A bit that specifies whether all recipients have finished processing the document.

**reserved2 (26 bits):** MUST be ignored and MUST be 0.

**unused2 (4 bytes):** Undefined and MUST be ignored.

**originatorString (variable):** A [DocRoutingSlipString](#Section_36c239f5e4d84c66b35a75d1bfec5bac) structure that specifies the originator of a document routing slip. The **originatorString.stringType** field MUST be 0x0001.

**rgRecipientRoutingSlipStrings (variable):** An array of DocRoutingSlipString structures that specifies recipients of a document routing slip. The count of items in the array is specified by **recipientCount**. The **stringType** field of each DocRoutingSlipString item MUST be 0x0002.

**subjectString (variable):** A DocRoutingSlipString structure that specifies the subject of a document routing slip. The **subjectString.stringType** field MUST be 0x0003.

**messageString (variable):** A DocRoutingSlipString structure that specifies the message of a document routing slip. The **messageString.stringType** field MUST be 0x0004.

**unused3 (variable):** Undefined and MUST be ignored. The length, in bytes, of the field is specified by the following formula:

1. 8 + rh.recLen – length

### DocRoutingSlipString

*Referenced by:* [*DocRoutingSlipAtom*](#Section_8dbe7f1cb2374383a9931a67e660faf0)

A structure that specifies information about a string in a document [**routing slip**](#gt_8cedfe36-260c-416e-aeab-7fee4bdef9c3).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| stringType | | | | | | | | | | | | | | | | stringLength | | | | | | | | | | | | | | | |
| string (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**stringType (2 bytes):** An **unsigned integer** that specifies the type of a string. It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0x0001 | The originator of a document routing slip. |
| 0x0002 | A recipient of a document routing slip. |
| 0x0003 | The subject of a document routing slip. |
| 0x0004 | The message body of a document routing slip. |

**stringLength (2 bytes):** An unsigned integer that specifies the number of bytes supplied for the string, minus 1. If **stringType** is equal to 0x0001 or 0x0002, this value MUST be greater than 0x0000.

**string (variable):** A **PrintableAnsiString** (section [2.2.22](#Section_bcde30fd302f4bf8abf4963b87ad40b3)) that specifies the characters of the string. The length, in bytes, of the string is specified by **stringLength** plus 1. If **stringType** is equal to 0x0001 or 0x0002, the byte at index **stringLength** minus 1 MUST be equal to 0x00 and the byte at index **stringLength** MUST be ignored. If **stringType** is equal to 0x0003 or 0x0004, the byte at index **stringLength** MUST be equal to 0x00.

### EnvelopeFlags9Atom

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies information about an [**envelope**](#gt_7a872c88-cf9d-4132-ba8b-4930f775dd27).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | | D | reserved2 | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_EnvelopeFlags9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**A - fHasEnvelope (1 bit):** A bit that specifies whether an [EnvelopeData9Atom](#Section_a156cedf061d45678f2b0fa9cb08a7ee) record exists in the file.

**B - fEnvelopeVisible (1 bit):** A bit that specifies whether the envelope is visible. If the value is **TRUE**, **fHasEnvelope** MUST also be **TRUE**.

**C - reserved1 (2 bits):** MUST be zero and MUST be ignored.

**D - fEnvelopeDirty (1 bit):** A bit that specifies whether the envelope has been modified since the last time it was sent to the mail client. If the value is **TRUE**, **fHasEnvelope** MUST also be **TRUE**.

**reserved2 (27 bits):** MUST be zero and MUST be ignored.

### EnvelopeData9Atom

*Referenced by:* [*PP9DocBinaryTagExtension*](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies data for an [**envelope**](#gt_7a872c88-cf9d-4132-ba8b-4930f775dd27).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_EnvelopeData9Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An **MsoEnvelopeCLSID** ([[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.3.8.1) that specifies data for an envelope. The length, in bytes, of this field is specified by **rh.recLen**.

### FontEmbedDataBlob

*Referenced by:* [*FontCollectionEntry*](#Section_fb4d26df15c74f978d8f6c73ea98e91d)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the font data of an embedded font.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be greater than or equal to 0x000 and less than or equal to 0x003. |
| **rh.recType** | MUST be an [RT\_FontEmbedDataBlob](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** A structure that specifies the font data of an embedded font as specified in [[Embed-Open-Type-Format]](https://go.microsoft.com/fwlink/?LinkId=118624). The length, in bytes, of this field is specified by **rh.recLen**.

### MetafileBlob

*Referenced by:* [*ExControlContainer*](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)*,* [*ExOleEmbedContainer*](#Section_c687090ca3594ffc918e415117e10229)*,* [*ExOleLinkContainer*](#Section_5311e92722f04e559f439142998efbd1)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**metafile**](#gt_ae5f028e-7e28-4a0b-bec6-2c87913f7db7) ([[MS-WMF]](%5bMS-WMF%5d.pdf#Section_4813e7fd52d04f42965f228c8b7488d2)).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mm | | | | | | | | | | | | | | | | xExt | | | | | | | | | | | | | | | |
| yExt | | | | | | | | | | | | | | | | data (variable) | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_MetaFile](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be greater than 0x00000010. |

**mm (2 bytes):** A signed integer that specifies the mapping mode of the metafile as specified in [MS-WMF] section [2.1.1.16](http://msdn.microsoft.com/en-us/library/97b31821-a0db-4113-a210-fffbcedcec4a/).

**xExt (2 bytes):** A signed integer that specifies the width of the metafile in units that correspond to the mapping mode specified by the **mm** field as specified in [MS-WMF] section 2.1.1.16.

**yExt (2 bytes):** A signed integer that specifies the height of the metafile in units that correspond to the mapping mode specified by the **mm** field as specified in [MS-WMF] section 2.1.1.16.

**data (variable):** A metafile as specified in [MS-WMF]. The length, in bytes, of the field is specified by the following formula:

1. rh.recLen – 6.

### RoundTripAnimationAtom

*Referenced by:* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)*,* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies animations for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) type that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripAnimationAtom12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An ECMA-376 document that specifies animations, along with embedded sounds if present. The package contains XML in the PresentationML Timing Info part containing a <timing> element that conforms to the schema specified by **CT\_SlideTiming** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.4.1.44.

### RoundTripAnimationHashAtom

*Referenced by:* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)*,* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a checksum for animation data.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| animationChecksum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripAnimationHashAtom12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**animationChecksum (4 bytes):** An **unsigned integer** that specifies the checksum of the animation data.

Let *corresponding slide* be specified as the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) that contains this **RoundTripAnimationHashAtom** record.

The data used to calculate the checksum is all fields in the [VisualSoundAtom](#Section_8cf2f3366e294368b5f1a21e8779f3af) record contained within the *corresponding slide*, computed sequentially in 4-byte pieces. The other input to the checksum calculation is all of the bytes of the **spid** field of the **OfficeArtFSP** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.40) that specify the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) identifier of each shape on the correspondingslide. The checksum value is a [**cyclic redundancy check (CRC)**](#gt_9cb45a36-92bb-4c14-b2fd-2ad7e2979bfd) logical exclusive or (XOR) hash of each consecutive 4-byte sequence in the specified data.

### RoundTripColorMappingAtom

*Referenced by:* [*HandoutRoundTripAtom*](#Section_245d3c1ee2b84468bea0464be6251e09)*,* [*NotesRoundTripAtom*](#Section_95d576adf038406283f1c8b31e01db00)*,* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)*,* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the color mapping for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| colorMapping (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripColorMapping12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**colorMapping (variable):** A [Utf8UnicodeString](#Section_d28ec6ef8a0e4351b4b8ec5c70ccdd76) that specifies the color mapping. Either the XML in this string contains a **clrMap** element that conforms to the schema specified by **CT\_ColorMapping** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.4.1.6, or the XML contains a **clrMapOverride** element that conforms to the schema specified by **CT\_ColorMappingOverride** as specified in [ECMA-376] Part 4: Markup Language Reference, section 4.4.1.7.

### RoundTripCompositeMasterId12Atom

*Referenced by:* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)*,* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies that a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) is a [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107) merged with its [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). The *corresponding main master slide* has a [RoundTripOriginalMainMasterId12Atom](#Section_4ffb4a9b891a41e689cdfd4312d08c90) record with the same identifier.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| compositeMasterId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripCompositeMasterId12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**compositeMasterId (4 bytes):**  An **unsigned integer** that specifies the identifier for the main master slide this slide was merged with. This field is equivalent to the **ST\_SlideMasterId** simple type as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.8.20.

### RoundTripContentMasterId12Atom

*Referenced by:* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the relation between a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) and its [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mainMasterId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| contentMasterInstanceId | | | | | | | | | | | | | | | | unused | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_RoundTripContentMasterId12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**mainMasterId (4 bytes):** An unsigned integer that specifies the identifier of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). This field is equivalent to the **ST\_SlideMasterId** simple type as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.8.20.

**contentMasterInstanceId (2 bytes):** An unsigned integer that specifies the instance identifier of the slide layout. This field is equivalent to the **ST\_SlideLayoutId** simple type as specified in [ECMA-376] Part 4: Markup Language Reference, section 4.8.18.

**unused (2 bytes):** Undefined and MUST be ignored.

### RoundTripContentMasterInfo12Atom

*Referenced by:* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recType** | MUST be an [RT\_RoundTripContentMasterInfo12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An ECMA-376 document that specifies a slide layout. The package contains XML in the PresentationML Content Master part containing a **sldLayout** element that conforms to the schema specified by **CT\_SlideLayout** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.4.1.36.

### RoundTripCustomTableStyles12Atom

*Referenced by:* [*DocumentContainer*](#Section_6254c4d152174e16b20dc04ddcce31c9)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies table styles.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | SHOULD[<110>](#Appendix_A_110" \o "Product behavior note 110) be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripCustomTableStyles12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An ECMA-376 document that specifies table styles. The package contains XML in the PresentationML Table Styles part containing a **tblStyle** element that conforms to the schema specified by **CT\_TableStyleList** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 5.1.4.2.27.

### RoundTripDocFlags12Atom

*Referenced by:* [*PP12DocBinaryTagExtension*](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies document-level flags.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | reserved | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripDocFlags12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**A - fCompressPicturesOnSave (1 bit):** A bit that specifies whether pictures are automatically compressed when saving.

**reserved (7 bits):** MUST be zero and MUST be ignored.

### RoundTripHeaderFooterDefaults12Atom

*Referenced by:* [*PP12SlideBinaryTagExtension*](#Section_1d1704d76e3e472296c70fbe7ca8f682)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies default [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) and [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) flags.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| A | B | C | D | E | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripHeaderFooterDefaults12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**A - fIncludeDate (1 bit):** A bit that specifies whether the date is included in the footer of new [**slides**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

**B - fIncludeFooter (1 bit):** A bit that specifies whether the footer is included in new slides.

**C - fIncludeHeader (1 bit):** A bit that specifies whether the header is included in new slides.

**D - fIncludeSlideNumber (1 bit):** A bit that specifies whether the slide number or page number is included in the footer of new slides.

**E - reserved (4 bits):** MUST be zero and MUST be ignored.

### RoundTripHFPlaceholder12Atom

*Referenced by:* [*ShapeClientRoundtripDataSubContainerOrAtom*](#Section_92bce4f0921c4b5b92d37ade03646250)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies that a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) is a [**header**](#gt_84a82291-9444-481e-97e3-4ff69a88e932) or [**footer**](#gt_c5883e8c-12bd-4d69-b0d0-6588eec448cc) [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| placeholderId | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripHFPlaceholder12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**placeholderId (1 byte):** A [**PlaceholderEnum**](#Section_dbfd04be077644d9b408b07f4c951eaf) enumeration that specifies the placeholder shape identifier. It MUST be PT\_MasterDate, PT\_MasterSlideNumber, PT\_MasterFooter, or PT\_MasterHeader.

### RoundTripNewPlaceholderId12Atom

*Referenced by:* [*ShapeClientRoundtripDataSubContainerOrAtom*](#Section_92bce4f0921c4b5b92d37ade03646250)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**placeholder**](#gt_25caffec-4e4b-4192-a04d-edcd14f0ec5f) identifier.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| newPlaceholderId | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripNewPlaceholderId12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000001. |

**newPlaceholderId (1 byte):** A [**PlaceholderEnum**](#Section_dbfd04be077644d9b408b07f4c951eaf) enumeration that specifies the [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) identifier. It MUST be PT\_VerticalObject or PT\_Picture.

### RoundTripNotesMasterTextStyles12Atom

*Referenced by:* [*NotesRoundTripAtom*](#Section_95d576adf038406283f1c8b31e01db00)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies text styles used by the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripNotesMasterTextStyles12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An ECMA-376 document that specifies text styles. The package contains XML in the PresentationML Main Master part containing a **txStyles** element that conforms to the schema specified by **CT\_SlideMasterTextStyles** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.4.1.48.

### RoundTripOArtTextStyles12Atom

*Referenced by:* [*MainMasterContainer*](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)*,* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies text styles used by a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripOArtTextStyles12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An ECMA-376 document that specifies text styles. The package contains XML in the PresentationML Main Master part containing a **txStyles** element that conforms to the schema specified by **CT\_SlideMasterTextStyles** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.4.1.48.

### RoundTripOriginalMainMasterId12Atom

*Referenced by:* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the original identifier of a <sldMaster> element in the Slide Master part that conforms to the schema specified by **CT\_SlideMaster** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.4.1.39.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| mainMasterId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripOriginalMainMasterId12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**mainMasterId (4 bytes):**  An **unsigned integer** that specifies the identifier of the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). This field is equivalent to the **ST\_SlideMasterId** simple type as specified in [ECMA-376] Part 4: Markup Language Reference, section 4.8.20.

### RoundTripShapeCheckSumForCustomLayouts12Atom

*Referenced by:* [*ShapeClientRoundtripDataSubContainerOrAtom*](#Section_92bce4f0921c4b5b92d37ade03646250)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies application-defined IDs for a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) and its text. To be interoperable this record SHOULD[<111>](#Appendix_A_111" \o "Product behavior note 111) be preserved if encountered but SHOULD[<112>](#Appendix_A_112" \o "Product behavior note 112) be omitted otherwise.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeCheckSum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| textCheckSum | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripShapeCheckSumForCL12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000008. |

**shapeCheckSum (4 bytes):** An unsigned integer that specifies an application-defined identifier for quickly determining whether the shape properties specified by the **OfficeArtSpContainer** record ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) that contains this **RoundTripShapeChecksumForCustomLayouts12Atom** have changed since they were last saved.

**textCheckSum (4 bytes):** An unsigned integer that specifies an application-defined identifier for quickly determining whether the text body specified by the [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record contained within the **OfficeArtSpContainer** record ([MS-ODRAW] section 2.2.14) that contains this **RoundTripShapeChecksumForCustomLayouts12Atom** has changed since it was last saved.

### RoundTripShapeId12Atom

*Referenced by:* [*ShapeClientRoundtripDataSubContainerOrAtom*](#Section_92bce4f0921c4b5b92d37ade03646250)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) identifier.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| shapeId | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripShapeId12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000004. |

**shapeId (4 bytes):** An unsigned integer that specifies the shape identifier. This field is equivalent to the **ST\_ShapeID** simple type as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 5.1.12.55.

### RoundTripSlideSyncInfo12Container

*Referenced by:* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)*,* [*SlideContainer*](#Section_4cac097673d04ab3a70be98b3cf1c312)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) that synchronizes to a slide in a slide library. Slide synchronization data is fully specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.7.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| serverId (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideLibUrl (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideSyncInfoAtom12 (40 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripSlideSyncInfo12](#Section_38fb1fa50a62477a8b14178df22de812). |

**serverId (variable):** A [ServerIdAtom](#Section_b008a1461e9e4e4aa0a39a6dd55bbf8a) record that specifies a unique identifier for a slide in a slide library.

**slideLibUrl (variable):** A [SlideLibUrlAtom](#Section_4f0d845d959e4deea2d7a4701a51a0b9) record that specifies the URL of a slide library.

**slideSyncInfoAtom12 (40 bytes):** A [SlideSyncInfoAtom12](#Section_54c75042f4af4a228d8d59df15f87557) record that specifies timestamps for slides that synchronize with versions stored in a slide library.

### ServerIdAtom

*Referenced by:* [*RoundTripSlideSyncInfo12Container*](#Section_7ab552d5545048f6816b8cbc266d7803)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a unique identifier for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) in a slide library.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| serverId (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**serverId (variable):** A **PrintableUnicodeString** (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the unique identifier for the slide. This field is equivalent to the **serverSldId** attribute specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.7.1.

### SlideLibUrlAtom

*Referenced by:* [*RoundTripSlideSyncInfo12Container*](#Section_7ab552d5545048f6816b8cbc266d7803)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the URL of a slide library.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| slideLibUrl (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be even. |

**slideLibUrl (variable):** An [HttpUrl](#Section_5984700489424f88a929fcfd49289bd3) that specifies the URL of the slide library.

### SlideSyncInfoAtom12

*Referenced by:* [*RoundTripSlideSyncInfo12Container*](#Section_7ab552d5545048f6816b8cbc266d7803)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies timestamps for a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) that synchronizes with a version of the slide stored in a slide library.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dateTimeModified (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| dateTimeInserted (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripSlideSyncInfoAtom12](#Section_38fb1fa50a62477a8b14178df22de812). |
| **rh.recLen** | MUST be 0x00000020. |

**dateTimeModified (16 bytes):** A [DateTimeStruct](#Section_2da0b9bf164f403dbf1bf8b83b2af166) structure that specifies the time stamp the slide was last modified on the server. This field is equivalent to the **serverSldModified** attribute as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 4.7.1.

**dateTimeInserted (16 bytes):** A DateTimeStruct structure that specifies the time stamp the slide was inserted in the document. This field is equivalent to the **clientInsertedTime** attribute as specified in [ECMA-376] Part 4: Markup Language Reference, section 4.7.1.

### RoundTripThemeAtom

*Referenced by:* [*HandoutRoundTripAtom*](#Section_245d3c1ee2b84468bea0464be6251e09)*,* [*NotesRoundTripAtom*](#Section_95d576adf038406283f1c8b31e01db00)*,* [*RoundTripMainMasterRecord*](#Section_2a26ce591c7b4d5c840532847659490e)*,* [*RoundTripSlideRecord*](#Section_fe7a9588d2e044d1b9b1ac2962592448)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies the theme of the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_RoundTripTheme12Atom](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An ECMA-376 document that specifies theme information. The package contains XML in the DrawingML Theme part containing a **theme** element that conforms to the schema specified by **CT\_OfficeStyleSheet** as specified in [[ECMA-376]](https://go.microsoft.com/fwlink/?LinkId=200054) Part 4: Markup Language Reference, section 5.1.8.9, or XML in the DrawingML Theme Override part containing a **themeOverride** element that conforms to the schema specified by **CT\_BaseStylesOverride** as specified in [ECMA-376] Part 4: Markup Language Reference, section 5.1.8.12.

### SmartTagStore11Container

*Referenced by:* [*PP11DocBinaryTagExtension*](#Section_662c3a59f11d4d3fb472c695b4e598a8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies information about all smart tags within the corresponding presentation. A smart tag is additional information that is specified to correspond to a string of text.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| cBags | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| propBagStore (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| rgPpropBag (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_SmartTagStore11Container](#Section_38fb1fa50a62477a8b14178df22de812). |

**cBags (4 bytes):** An unsigned integer that specifies the count of items in **rgPpropBag.**

**propBagStore (variable):** A **PropertyBagStore** that specifies a collection of smart tag types and their corresponding data as specified in [[MS-OSHARED]](%5bMS-OSHARED%5d.pdf#Section_d93502fa5b8f4f47a3fe5574046f4b8d) section 2.3.4.1.

**rgPpropBag (variable):** An array of **PropertyBag** that specifies a set of properties with their corresponding key/value pairs as specified in [MS-OSHARED] section 2.3.4.4. These key/value pairs each represent a string of text and correspond to an entry within **propBagStore**.

### SoundDataBlob

*Referenced by:* [*SoundContainer*](#Section_8c5498fa18324659a02bd23e28ef21b3)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies audio data for a sound.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_SoundDataBlob](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** A structure that specifies [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5) or [**AIFF**](#gt_bca83483-d1d0-4227-a1c3-e6e63d26257b) audio data for a sound. The length, in bytes, of this field is specified by **rh.recLen**.

### ProgStringTagContainer

*Referenced by:* [*DocProgTagsSubContainerOrAtom*](#Section_0d1a5da5dcab4b3f8c97b79d74321e37)*,* [*ShapeProgTagsSubContainerOrAtom*](#Section_a9b8cd9324d3426f9c80bd46a72fa2b7)*,* [*SlideProgTagsSubContainerOrAtom*](#Section_2bc67516d5ab4d9d86761a825c64c2a8)

A [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) that has a [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) as its value.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagValueAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0xF. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_ProgStringTag](#Section_38fb1fa50a62477a8b14178df22de812). |

**tagNameAtom (variable):** A [TagNameAtom](#Section_274ba042a7134d939542cc31967c0857) record that specifies the name of the programmable tag.

**tagValueAtom (variable):** An optional [TagValueAtom](#Section_11f5be351e644038bd7e6e6248f0b43f) record that specifies the value of the programmable tag.

### TagNameAtom

*Referenced by:* [*ProgStringTagContainer*](#Section_4c2f2168082c433d8356471fa54af929)*,* [*UnknownBinaryTag*](#Section_4f7ad45eb5844a93b481894f5c671160)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that contains the name of the name-value pair in a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagName (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be greater than zero. |

**tagName (variable):** A **PrintableUnicodeString** string (section [2.2.23](#Section_7b3104aabe314358b31039775872b257)) that specifies the name of the programmable tag. The length, in bytes, of the field is specified by **rh.recLen**.

### TagValueAtom

*Referenced by:* [*ProgStringTagContainer*](#Section_4c2f2168082c433d8356471fa54af929)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that contains the value of the name-value pair in a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagValue (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x001. |
| **rh.recType** | MUST be an **RT\_CString** (section [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812)). |
| **rh.recLen** | MUST be an even number. It MUST be greater than zero. |

**tagValue (variable):** A [UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) string that specifies the value of the programmable tag. The length, in bytes, of the field is specified by **rh.recLen**.

### UnknownBinaryTag

*Referenced by:* [*DocProgBinaryTagSubContainerOrAtom*](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d)*,* [*ShapeProgBinaryTagSubContainerOrAtom*](#Section_28c25608369e42a798166b3515a4ecca)*,* [*SlideProgBinaryTagSubContainerOrAtom*](#Section_ac9aa6bd3c1549bd81d95b8bfd966053)

A pair of [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that specifies a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) that has binary data as its value.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| tagNameAtom (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| tagData (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**tagNameAtom (variable):** A [TagNameAtom](#Section_274ba042a7134d939542cc31967c0857) record that specifies the name of the programmable tag.

**tagData (variable):** A [BinaryTagDataBlob](#Section_5eba9e3ad09a4d058e5bf148f44021a4) record that specifies the value of the programmable tag.

### BinaryTagDataBlob

*Referenced by:* [*UnknownBinaryTag*](#Section_4f7ad45eb5844a93b481894f5c671160)

An [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that contains the value of the name-value pair in a [**programmable tag**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| rh | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| data (variable) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**rh (8 bytes):** A **RecordHeader** structure (section [2.3.1](#Section_df2011940cd04dfbbf10eea353d8eabc)) that specifies the header for this record. Sub-fields are further specified in the following table.

| Field | Meaning |
| --- | --- |
| **rh.recVer** | MUST be 0x0. |
| **rh.recInstance** | MUST be 0x000. |
| **rh.recType** | MUST be an [RT\_BinaryTagDataBlob](#Section_38fb1fa50a62477a8b14178df22de812). |

**data (variable):** An array of bytes that specifies the data of this item. The size, in bytes, of the data is specified by **rh.recLen**.

## Common Structures

### ColorStruct

*Referenced by:* [*SchemeListElementColorSchemeAtom*](#Section_cf7562a6f79f4705a2fb5f5d84bea12d)*,* [*SlideSchemeColorSchemeAtom*](#Section_9cfca750dabb4967b1332583a9f8c392)

A structure that specifies a color in the sRGB color space as specified in [[IEC-RGB]](https://go.microsoft.com/fwlink/?LinkId=89893).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| red | | | | | | | | green | | | | | | | | blue | | | | | | | | unused | | | | | | | |

**red (1 byte):** An unsigned integer that specifies the red component of this color.

**green (1 byte):** An unsigned integer that specifies the green component of this color.

**blue (1 byte):** An unsigned integer that specifies the blue component of this color.

**unused (1 byte):** Undefined and MUST be ignored.

### ColorIndexStruct

*Referenced by:* [*AnimationInfoAtom*](#Section_4361cc1fcd514e61a451d252bf8e1069)*,* [*SlideShowDocInfoAtom*](#Section_6d266473cadd49ada3cb9f3601365b9e)*,* [*TextCFException*](#Section_c75024a214cb4d7d9964bdab2fcd9d93)*,* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

A structure that specifies an index in the color scheme, or a color in the sRGB color space as specified in [[IEC-RGB]](https://go.microsoft.com/fwlink/?LinkId=89893). Color schemes are specified by the [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) record.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| red | | | | | | | | green | | | | | | | | blue | | | | | | | | index | | | | | | | |

**red (1 byte):** An unsigned integer that specifies the red component of this color.

**green (1 byte):** An unsigned integer that specifies the green component of this color.

**blue (1 byte):** An unsigned integer that specifies the blue component of this color.

**index (1 byte):** An unsigned integer that specifies the index in the color scheme. It MUST be a value from the following table.

| Value | Description |
| --- | --- |
| 0x00 | Background color |
| 0x01 | Text color |
| 0x02 | Shadow color |
| 0x03 | Title text color |
| 0x04 | Fill color |
| 0x05 | Accent 1 color |
| 0x06 | Accent 2 color |
| 0x07 | Accent 3 color |
| 0xFE | Color is an sRGB value specified by **red**, **green**, and **blue** fields. |
| 0xFF | Color is undefined. |

### WideColorStruct

*Referenced by:* [*RecolorEntry*](#Section_9270c7eca27544869096a599c1e3234a)*,* [*RecolorEntryBrush*](#Section_2da771e4494f4258b73b6d011315a3ed)*,* [*RecolorEntryColor*](#Section_c4059bd1b1474676ada89ca444130e07)*,* [*RecolorInfoAtom*](#Section_01ac11fb62734b36932d39b861eb144c)

A structure that specifies a color in the sRGB color space as specified in [[IEC-RGB]](https://go.microsoft.com/fwlink/?LinkId=89893).

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| red | | | | | | | | | | | | | | | | green | | | | | | | | | | | | | | | |
| blue | | | | | | | | | | | | | | | |

**red (2 bytes):** An unsigned integer that specifies the red component of this color.

**green (2 bytes):** An unsigned integer that specifies the green component of this color.

**blue (2 bytes):** An unsigned integer that specifies the blue component of this color.

### DateTimeStruct

*Referenced by:* [*BroadcastDocInfoAtom*](#Section_53cdb990207c44bfaa2bb9852c84c0a1)*,* [*Comment10Atom*](#Section_75f276597c4b4bf3ad31d5e221c24494)*,* [*SlideSyncInfoAtom12*](#Section_54c75042f4af4a228d8d59df15f87557)

A structure that specifies the date and time.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| datetime (16 bytes) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**datetime (16 bytes):** A **SYSTEMTIME** structure, as specified in [[MS-DTYP]](%5bMS-DTYP%5d.pdf#Section_cca2742956894a16b2b49325d93e4ba2) section [2.3.13](http://msdn.microsoft.com/en-us/library/2fefe8dd-ab48-4e33-a7d5-7171455a9289/), that specifies the date and time.

### PointStruct

*Referenced by:* [*Comment10Atom*](#Section_75f276597c4b4bf3ad31d5e221c24494)*,* [*DocumentAtom*](#Section_121f272834974a0a829e6f416fee2ee6)*,* [*NoZoomViewInfoAtom*](#Section_377e8d7886934fecb31caa890909f4b3)*,* [*ZoomViewInfoAtom*](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c)

A structure that specifies a point in the *x-y* coordinate system.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**x (4 bytes):** A signed integer that specifies the *x*-coordinate. Positive *x* increases to the right.

**y (4 bytes):** A signed integer that specifies the *y*-coordinate. Positive *y* increases to the bottom.

### RatioStruct

*Referenced by:* [*DocumentAtom*](#Section_121f272834974a0a829e6f416fee2ee6)*,* [*NormalViewSetInfoAtom*](#Section_b906d23a45d244a2b486545f21676ecd)*,* [*ScalingStruct*](#Section_b2cf89e0d255468fa571effd2b34b5b0)

A structure that specifies a rational number.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| numer | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| denom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**numer (4 bytes):**  A signed integer that specifies the numerator portion of this ratio.

**denom (4 bytes):** A signed integer that specifies the denominator portion of this ratio. It MUST NOT be 0x00000000.

### RectStruct

*Referenced by:* [*OfficeArtClientAnchorData*](#Section_beecde28e2394d88b92c6e9dcf031e39)

A structure that specifies a rectangle.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| top | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| left | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| right | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| bottom | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**top (4 bytes):** A signed integer that specifies the minimum *y*-value of the rectangle.

**left (4 bytes):** A signed integer that specifies the minimum *x*-value of the rectangle.

**right (4 bytes):** A signed integer that specifies the maximum *x*-value of the rectangle.

**bottom (4 bytes):** A signed integer that specifies the maximum *y*-value of the rectangle.

### SmallRectStruct

*Referenced by:* [*OfficeArtClientAnchorData*](#Section_beecde28e2394d88b92c6e9dcf031e39)

A structure that specifies a small rectangle.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| top | | | | | | | | | | | | | | | | left | | | | | | | | | | | | | | | |
| right | | | | | | | | | | | | | | | | bottom | | | | | | | | | | | | | | | |

**top (2 bytes):** A signed integer that specifies the minimum *y*-value of the rectangle.

**left (2 bytes):** A signed integer that specifies the minimum *x*-value of the rectangle.

**right (2 bytes):** A signed integer that specifies the maximum *x*-value of the rectangle.

**bottom (2 bytes):** A signed integer that specifies the maximum *y*-value of the rectangle.

### ScalingStruct

*Referenced by:* [*NoZoomViewInfoAtom*](#Section_377e8d7886934fecb31caa890909f4b3)*,* [*ZoomViewInfoAtom*](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c)

A structure that specifies two-dimensional scaling.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| x | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| y | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ... | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**x (8 bytes):** A **RatioStruct** structure (section [2.12.6](#Section_32cd4da38d474599ace5d608331e1214)) that specifies the scale to apply along the *x*-axis.

**y (8 bytes):** A **RatioStruct** structure that specifies the scale to apply along the *y*-axis.

### TmsfTimeStruct

*Referenced by:* [*ExCDAudioAtom*](#Section_4dfd1e1980134040848ea7ecdfa6bd00)

A structure that specifies CD (compact disc) audio time in terms of tracks, minutes, seconds, and frames.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 1  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 2  0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 3  0 | 1 |
| track | | | | | | | | minute | | | | | | | | second | | | | | | | | frame | | | | | | | |

**track (1 byte):** An unsigned integer that specifies the track number. It MUST be greater than 0x00 and less than or equal to 0x64.

**minute (1 byte):** An unsigned integer that specifies the number of minutes. It MUST be less than or equal to 0x3C.

**second (1 byte):** An unsigned integer that specifies the number of seconds. It MUST be less than 0x3C.

**frame (1 byte):** An unsigned integer that specifies the frame number. It MUST be less than 0x4A.

## Enumerations

### AnimAfterEffectEnum

*Referenced by:* [*AnimationInfoAtom*](#Section_4361cc1fcd514e61a451d252bf8e1069)

An enumeration that specifies behavior types of [**shapes**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) or text after animation effects are complete.

| Name | Value | Meaning |
| --- | --- | --- |
| **AI\_NoAfterEffect** | 0x00 | No further change to the animated object after the animation is complete. |
| **AI\_Dim** | 0x01 | Change the animated object to a specified color after the animation is complete. |
| **AI\_Hide** | 0x02 | Hide the animated object on the next mouse click. |
| **AI\_HideImmediately** | 0x03 | Hide the animated object immediately after the animation is complete. |

### AnimBuildTypeEnum

*Referenced by:* [*AnimationInfoAtom*](#Section_4361cc1fcd514e61a451d252bf8e1069)

An enumeration that specifies animation [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) types.

| Name | Value | Meaning |
| --- | --- | --- |
| **BT\_FollowMaster** | 0xFE | The shape follows the build type of the [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) on its [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) or its [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). |
| **BT\_NoBuild** | 0x00 | No build for the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e). |
| **BT\_OneBuild** | 0x01 | The shape animates in its entirety. |
| **BT\_Level1Build** | 0x02 | Each paragraph of level 1 animates separately, and paragraphs of all other levels animate at the same time as their level 1 paragraphs. |
| **BT\_Level2Build** | 0x03 | Each paragraph from level 1 to level 2 animates separately, and paragraphs of all other levels animate at the same time as their level 2 paragraphs. |
| **BT\_Level3Build** | 0x04 | Each paragraph from level 1 to level 3 animates separately, and paragraphs of all other levels animate at the same time as their level 3 paragraphs. |
| **BT\_Level4Build** | 0x05 | Each paragraph from level 1 to level 4 animates separately, and paragraphs of level 5 animate at the same time as their level 4 paragraphs. |
| **BT\_Level5Build** | 0x06 | Each paragraph from level 1 to level 5 animates separately. |
| **BT\_GraphBySeries** | 0x07 | Each series animates separately, and all elements in each series animate at the same time. |
| **BT\_GraphByCategory** | 0x08 | Each category animates separately, and all elements in each category animate at the same time. |
| **BT\_GraphByElementInSeries** | 0x09 | Elements in the chart animate in the following order:  Element in series 1 and category 1  Element in series 1 and category 2  Element in series 1 and category 3  …  Element in series 2 and category 1  Element in series 2 and category 2  Element in series 2 and category 3  …  Element in series 3 and category 1  Element in series 3 and category 2  Element in series 3 and category 3  … |
| **BT\_GraphByElementInCategory** | 0x0A | Elements in the chart animate in the following order:  Element in category 1 and series 1  Element in category 1 and series 2  Element in category 1 and series 3  …  Element in category 2 and series 1  Element in category 2 and series 2  Element in category 2 and series 3  …  Element in category 3 and series 1  Element in category 3 and series 2  Element in category 3 and series 3  … |

### BuildTypeEnum

*Referenced by:* [*BuildAtom*](#Section_baa3c302b96c4f0b851708c50c38952b)

An enumeration that specifies different types of [**builds**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252).

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_BuildParagraph** | 0x00000001 | Paragraph build type. |
| **TL\_BuildChart** | 0x00000002 | Chart build type. |
| **TL\_BuildDiagram** | 0x00000003 | Diagram build type. |

### ChartBuildEnum

*Referenced by:* [*ChartBuildAtom*](#Section_f3f0965c0aaf43099601fc33308ff0aa)

An enumeration that specifies different types of chart [**builds**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252).

| Name | Value | Meaning |
| --- | --- | --- |
| **TLCB\_AsOneObject** | 0x00000000 | Chart animates in its entirety. |
| **TLCB\_BySeries** | 0x00000001 | Each series animates separately, and all elements in each series animate at the same time. |
| **TLCB\_ByCategory** | 0x00000002 | Each category animates separately, and all elements in each category animate at the same time. |
| **TLCB\_ByElementInSeries** | 0x00000003 | Elements in the chart animate in the following order:  Element in series 1 and category 1  Element in series 1 and category 2  Element in series 1 and category 3  …  Element in series 2 and category 1  Element in series 2 and category 2  Element in series 2 and category 3  …  Element in series 3 and category 1  Element in series 3 and category 2  Element in series 3 and category 3  … |
| **TLCB\_ByElementInCategory** | 0x00000004 | Elements in the chart animate in the following order:  Element in category 1 and series 1  Element in category 1 and series 2  Element in category 1 and series 3  …  Element in category 2 and series 1  Element in category 2 and series 2  Element in category 2 and series 3  …  Element in category 3 and series 1  Element in category 3 and series 2  Element in category 3 and series 3  … |
| **TLCB\_Custom** | 0x00000005 | Custom chart build type. |

### ColorModeEnum

*Referenced by:* [*PrintOptionsAtom*](#Section_38013adecfee4bbda443d84822a80173)

An enumeration that specifies how colors are printed.

| Name | Value | Meaning |
| --- | --- | --- |
| **CM\_BlackAndWhite** | 0x00 | Every color is represented as black only or white only. |
| **CM\_Grayscale** | 0x01 | Every color is represented by its corresponding shade of gray. |
| **CM\_Color** | 0x02 | No processing is done on the colors before sending them to the printer. |

### ConditionEnum

*Referenced by:* [*TimeConditionContainer*](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)

An enumeration that specifies the type of a [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704).

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_CT\_None** | 0x00000001 | None. |
| **TL\_CT\_Begin** | 0x00000002 | Begin condition that specifies when a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) will be activated. |
| **TL\_CT\_End** | 0x00000003 | End condition that specifies when a time node will be deactivated. |
| **TL\_CT\_Next** | 0x00000004 | Next condition that specifies when the next child time node of a sequential time node will be activated. |
| **TL\_CT\_Previous** | 0x00000005 | Previous condition that specifies when the previous child time node of a sequential time node will be activated. |
| **TL\_CT\_EndSync** | 0x00000006 | EndSync condition that specifies how to synchronize the stopping of the child nodes of a time node. |

### DiagramBuildEnum

*Referenced by:* [*DiagramBuildAtom*](#Section_f23973b309df492e99149cd331f8a5bc)

An enumeration that specifies the animation diagram [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) type to be applied to a diagram.

| Name | Value | Meaning |
| --- | --- | --- |
| **TLDB\_AsOneObject** | 0x00000000 | The diagram and all corresponding parts animate as one graphical object. |
| **TLDB\_DepthByNode** | 0x00000001 | The root shape of the diagram animates first, followed by its branches from left to right. For each branch, the root shape of the branch animates first, followed by the branches of this branch. This process is recursive for each shape in the diagram. |
| **TLDB\_DepthByBranch** | 0x00000002 | The root shape of the diagram animates first, followed by its branches from left to right; and each of its branches animates as one graphical object. |
| **TLDB\_BreadthByNode** | 0x00000003 | The root shape of the diagram animates first, followed by its levels from top to bottom. Shapes in each level animate separately from left to right. |
| **TLDB\_BreadthByLevel** | 0x00000004 | The root shape of the diagram animates first, followed by its levels from top to bottom. Each level animates as one graphical object. |
| **TLDB\_ClockWise** | 0x00000005 | Shapes in the diagram animate in the clockwise direction. |
| **TLDB\_ClockWiseIn** | 0x00000006 | Shapes in the diagram animate in the clockwise direction. Shapes animate inwardly starting from the outermost ring. |
| **TLDB\_ClockWiseOut** | 0x00000007 | Shapes in the diagram animate in the clockwise direction. Shapes animate outwardly starting from the innermost ring. |
| **TLDB\_CounterClockWise** | 0x00000008 | Shapes in the diagram animate in the counterclockwise direction. |
| **TLDB\_CounterClockWiseIn** | 0x00000009 | Shapes in the diagram animate in the counterclockwise direction. Shapes animate inwardly starting from the outermost ring. |
| **TLDB\_CounterClockWiseOut** | 0x0000000A | Shapes in the diagram animate in the counterclockwise direction. Shapes animate outwardly starting from the innermost ring. |
| **TLDB\_InByRing** | 0x0000000B | Rings in the diagram animate from the outside to the inside. All shapes in each ring animate at the same time. |
| **TLDB\_OutByRing** | 0x0000000C | Rings in the diagram animate from the inside to the outside. All shapes in each ring animate at the same time. |
| **TLDB\_Up** | 0x0000000D | Shapes in the diagram animate from bottom to top. |
| **TLDB\_Down** | 0x0000000E | Shapes in the diagram animate from top to bottom. |
| **TLDB\_AllAtOnce** | 0x0000000F | All shapes in the diagram animate at the same time. |
| **TLDB\_Custom** | 0x00000010 | Shapes in the diagram animate in a custom way not otherwise specified by one of the allowed diagram build types. |

### DiffTypeEnum

*Referenced by:* [*DiffRecordHeaders*](#Section_8e2858264cf64479bc4dff5ac5aed8de)

An enumeration that specifies different types of document changes made by a reviewer.

| Name | Value | Meaning |
| --- | --- | --- |
| **Diff\_DocDiff** | 0x00000000 | Document level change. |
| **Diff\_SlideDiff** | 0x00000002 | Slide change. |
| **Diff\_MainMasterDiff** | 0x00000003 | Main master change. |
| **Diff\_SlideListDiff** | 0x00000004 | Slide list change. |
| **Diff\_MasterListDiff** | 0x00000005 | Master list change. |
| **Diff\_ShapeListDiff** | 0x00000006 | Shape list change. |
| **Diff\_ShapeDiff** | 0x00000007 | Shape change. |
| **Diff\_TextDiff** | 0x00000009 | Text change. |
| **Diff\_NotesDiff** | 0x0000000A | Notes change. |
| **Diff\_SlideShowDiff** | 0x0000000B | Slide show change. |
| **Diff\_HeaderFooterDiff** | 0x0000000C | Header footer change. |
| **Diff\_NamedShowDiff** | 0x0000000E | Named show change. |
| **Diff\_NamedShowListDiff** | 0x0000000F | Named show list change. |
| **Diff\_RecolorInfoDiff** | 0x00000012 | Recolor info change. |
| **Diff\_ExternalObjectDiff** | 0x00000013 | External object change. |
| **Diff\_TableListDiff** | 0x00000015 | Table list change. |
| **Diff\_TableDiff** | 0x00000016 | Table change. |
| **Diff\_InteractiveInfoDiff** | 0x00000017 | Interactive information change. |

### ElementTypeEnum

*Referenced by:* [*VisualShapeChartElementAtom*](#Section_660780f345414850bae696b8ffa7d645)*,* [*VisualShapeGeneralAtom*](#Section_e3f4be5088fd43fdb68f82f2743e92ea)*,* [*VisualSoundAtom*](#Section_8cf2f3366e294368b5f1a21e8779f3af)

An enumeration that specifies the element type of an animation target.

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_ET\_ShapeType** | 0x00000001 | The animation targets a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) or some part of a shape. |
| **TL\_ET\_SoundType** | 0x00000002 | The animation targets a sound file that does not correspond to a shape. |

### ExColorFollowEnum

*Referenced by:* [*ExOleEmbedAtom*](#Section_003441ca0e10403b92c3ebcd7fcc6a07)

An enumeration that specifies how an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) follows the [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5).

| Name | Value | Meaning |
| --- | --- | --- |
| **ExColor\_FollowNone** | 0x00000000 | Does not follow the color scheme. |
| **ExColor\_FollowScheme** | 0x00000001 | Follows the color scheme. |
| **ExColor\_FollowTextAndBackground** | 0x00000002 | Follows only the text and background colors of the color scheme. |

### ExOleObjSubTypeEnum

*Referenced by:* [*ExOleObjAtom*](#Section_a35170168e3245859a42adae02eea798)

An enumeration that specifies the subtype of an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) based on its **ProgID** (described in [[MSDN-COM]](https://go.microsoft.com/fwlink/?LinkId=89977)).

| Name | Value | Meaning |
| --- | --- | --- |
| **ExOleSub\_Default** | 0x00000000 | Used when none of the following apply. |
| **ExOleSub\_Clipart** | 0x00000001 | MS\_ClipArt\_Gallery |
| **ExOleSub\_WordDoc** | 0x00000002 | Word.Document or Word.DocumentMacroEnabled |
| **ExOleSub\_Excel** | 0x00000003 | Excel.Sheet, Excel.SheetMacroEnabled or Excel.SheetBinaryMacroEnabled |
| **ExOleSub\_Graph** | 0x00000004 | MSGraph.Chart or MSGraph |
| **ExOleSub\_OrgChart** | 0x00000005 | OrgChart, MSOrgChart or OrgPlusWOPX |
| **ExOleSub\_Equation** | 0x00000006 | Equations or Equation |
| **ExOleSub\_WordArt** | 0x00000007 | MSWordArt |
| **ExOleSub\_Sound** | 0x00000008 | SoundRec |
| **ExOleSub\_Project** | 0x0000000C | MSProject |
| **ExOleSub\_NoteIt** | 0x0000000D | Note-It |
| **ExOleSub\_ExcelChart** | 0x0000000E | Excel.Chart |
| **ExOleSub\_MediaPlayer** | 0x0000000F | MPlayer, MIDFile or AVIFile |
| **ExOleSub\_WordPad** | 0x00000010 | WordPad.Document |
| **ExOleSub\_Visio** | 0x00000011 | Visio.Drawing[<113>](#Appendix_A_113" \o "Product behavior note 113) |
| **ExOleSub\_WordODF** | 0x00000012 | Word.OpenDocumentText[<114>](#Appendix_A_114" \o "Product behavior note 114) |
| **ExOleSub\_ExcelODF** | 0x00000013 | Excel.OpenDocumentSpreadsheet[<115>](#Appendix_A_115" \o "Product behavior note 115) |
| **ExOleSub\_PPTODF** | 0x00000014 | PowerPoint.OpenDocumentPresentation[<116>](#Appendix_A_116" \o "Product behavior note 116) |

### ExOleObjTypeEnum

*Referenced by:* [*ExOleObjAtom*](#Section_a35170168e3245859a42adae02eea798)

An enumeration that specifies the type of an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096).

| Name | Value | Meaning |
| --- | --- | --- |
| **ExOle\_Embedded** | 0x00000000 | An embedded OLE object; the object is serialized and saved within the file. |
| **ExOle\_Link** | 0x00000001 | A linked OLE object; the object is saved outside of the file. |
| **ExOle\_Control** | 0x00000002 | The OLE object is an [**ActiveX control**](#gt_f3dcc35f-8f80-474e-ac39-106a23f059c2). |

### InteractiveInfoActionEnum

*Referenced by:* [*InteractiveInfoAtom*](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7)

An enumeration that specifies an action that can be performed when interacting with an object during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

| Name | Value | Meaning |
| --- | --- | --- |
| **II\_NoAction** | 0x00 | No effect. |
| **II\_MacroAction** | 0x01 | A macro is executed. |
| **II\_RunProgramAction** | 0x02 | A program is run. |
| **II\_JumpAction** | 0x03 | The current [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) of the slide show jumps to another presentation slide in the same [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae). |
| **II\_HyperlinkAction** | 0x04 | A URL is executed. |
| **II\_OLEAction** | 0x05 | An OLE action (only valid if the object this applies to is an OLE embedded object). |
| **II\_MediaAction** | 0x06 | A media object is played. |
| **II\_CustomShowAction** | 0x07 | A [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510) is displayed. |

### InteractiveInfoJumpEnum

*Referenced by:* [*InteractiveInfoAtom*](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7)

An enumeration that specifies a location relative to the currently-displayed [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) in the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

| Name | Value | Meaning |
| --- | --- | --- |
| **II\_NoJump** | 0x00 | No change. |
| **II\_NextSlide** | 0x01 | The next slide. |
| **II\_PreviousSlide** | 0x02 | The previous slide. |
| **II\_FirstSlide** | 0x03 | The first slide. |
| **II\_LastSlide** | 0x04 | The last slide. |
| **II\_LastSlideViewed** | 0x05 | The last viewed slide. |
| **II\_EndShow** | 0x06 | The end of show slide (a virtual slide displayed after the last slide). |

### LinkToEnum

*Referenced by:* [*InteractiveInfoAtom*](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7)

An enumeration that specifies how the action of a hyperlink is interpreted. All locations are relative to the currently-displayed [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) in the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

| Name | Value | Meaning |
| --- | --- | --- |
| **LT\_NextSlide** | 0x00 | The next slide. |
| **LT\_PreviousSlide** | 0x01 | The previous slide. |
| **LT\_FirstSlide** | 0x02 | The first slide. |
| **LT\_LastSlide** | 0x03 | The last slide. |
| **LT\_CustomShow** | 0x06 | A [**named show**](#gt_1d21359a-1cf3-4634-94b3-de2d82cc7510). |
| **LT\_SlideNumber** | 0x07 | A specific slide number. |
| **LT\_Url** | 0x08 | A [**Uniform Resource Locator (URL)**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1). |
| **LT\_OtherPresentation** | 0x09 | Another presentation file. |
| **LT\_OtherFile** | 0x0A | Another file that is not necessarily a presentation. |
| **LT\_Nil** | 0xFF | The hyperlink is not valid. |

### NormalViewSetBarStates

*Referenced by:* [*NormalViewSetInfoAtom*](#Section_b906d23a45d244a2b486545f21676ecd)

An enumeration that specifies different states of a region of a view.

| Name | Value | Meaning |
| --- | --- | --- |
| **BS\_Minimized** | 0x00 | The region occupies a minimal area of the view. |
| **BS\_Restored** | 0x01 | The region has an intermediate size. |
| **BS\_Maximized** | 0x02 | The region occupies a maximal area of the view. |

### OLEVerbEnum

*Referenced by:* [*AnimationInfoAtom*](#Section_4361cc1fcd514e61a451d252bf8e1069)*,* [*InteractiveInfoAtom*](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7)

An enumeration that specifies the identifier of an [**OLE verb**](#gt_2a270240-fb7a-4857-b744-60832249c91e). Because this enumeration refers to values defined by the OLE object that it is linked to, the sample values listed in the table are placeholders that specify which command to run. The actual number of verbs depends on the [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) itself.

| Name | Value | Meaning |
| --- | --- | --- |
| **OV\_Primary** | 0x00 | The primary verb is to be used. |
| **OV\_Secondary** | 0x01 | The secondary verb is to be used. |
| **OV\_Tertiary** | 0x02 | The tertiary verb is to be used. |

### ParaBuildEnum

*Referenced by:* [*ParaBuildAtom*](#Section_8eeb2908927340e8bb4330d07220ba58)

An enumeration that specifies the animation paragraph [**build**](#gt_cc7ba409-2788-4911-9bd1-196fa5bfd252) type that is to be applied to the paragraphs of the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

| Name | Value | Meaning |
| --- | --- | --- |
| **TLPB\_AllAtOnce** | 0x00000000 | All paragraphs in the shape animate at the same time. |
| **TLPB\_BuildByNthLevel** | 0x00000001 | Paragraph levels 1 to *n* – 1 in the shape animate separately. All paragraph levels *n* or greater animate at the same time. |
| **TLPB\_CustomBuild** | 0x00000002 | Applies a custom animation paragraph build type to the paragraphs of the shape. |
| **TLPB\_AsAWhole** | 0x00000003 | The shape and all paragraphs within the shape animate as one graphical object. |

### PhotoAlbumFrameShapeEnum

*Referenced by:* [*PhotoAlbumInfo10Atom*](#Section_2782f287ec64433182bc63fb6eb8c98e)

An enumeration that specifies how the frames around the pictures in the photo album are drawn. Some frames are created by cropping the photos to a certain [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e), and others involve putting a frame image on top of them without modifying them.

| Name | Value | Meaning |
| --- | --- | --- |
| **PA\_Rectangle** | 0x0000 | The pictures are drawn normally. |
| **PA\_RoundedRectangle** | 0x0001 | The pictures are drawn with their edges cropped such that the shape of the frame of the pictures is a rounded rectangle. |
| **PA\_Beveled** | 0x0002 | The pictures are drawn to look like the frame has a beveled edge. |
| **PA\_Oval** | 0x0003 | The pictures are drawn with their edges cropped such that the shape of the frame of the pictures is an oval. |
| **PA\_Octagon** | 0x0004 | The pictures are drawn with triangular shapes covering the four corners of the frame. |
| **PA\_Cross** | 0x0005 | The pictures are drawn with square shapes covering the four corners of the frame. |
| **PA\_Plaque** | 0x0006 | The pictures are drawn with rounded shapes covering the four corners of the frame. |

### PhotoAlbumLayoutEnum

*Referenced by:* [*PhotoAlbumInfo10Atom*](#Section_2782f287ec64433182bc63fb6eb8c98e)

An enumeration that specifies how the pictures are arranged on each [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192).

| Name | Value | Meaning |
| --- | --- | --- |
| **PA\_FitToSlide** | 0x00 | Each presentation slide contains one picture that is scaled as large as will fit within the bounds of the slides while still preserving the aspect ratio. |
| **PA\_OnePicture** | 0x01 | Each presentation slide contains one picture. |
| **PA\_TwoPictures** | 0x02 | Each presentation slide contains two pictures. |
| **PA\_FourPictures** | 0x03 | Each presentation slide contains four pictures |
| **PA\_OnePictureAndTitle** | 0x04 | Each presentation slide contains one picture and a title [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2). |
| **PA\_TwoPicturesAndTitle** | 0x05 | Each presentation slide contains two pictures and a title placeholder shape. |
| **PA\_FourPicturesAndTitle** | 0x06 | Each presentation slide contains four pictures and a title placeholder shape. |

### PlaceholderEnum

*Referenced by:* [*PlaceholderAtom*](#Section_5a37fba11e7045d8bda4315730bd3c54)*,* [*RoundTripHFPlaceholder12Atom*](#Section_ec3baf39684b49d38850d5798f0a1915)*,* [*RoundTripNewPlaceholderId12Atom*](#Section_c13cfcfdd6964aecb1f2eafb3bd3977b)*,* [*SlideAtom*](#Section_57e11e6ce5504c4380b672731eee8abd)

An enumeration that specifies the type of a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2). The meaning of each enumeration value is further specified in the PlaceholderAtom record. This enumeration is also used to define a [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107) as described in the SlideAtom record.

| Name | Value | Meaning |
| --- | --- | --- |
| **PT\_None** | 0x00 | No placeholder shape. |
| **PT\_MasterTitle** | 0x01 | Master title text placeholder shape. |
| **PT\_MasterBody** | 0x02 | Master body text placeholder shape. |
| **PT\_MasterCenterTitle** | 0x03 | Master center title text placeholder shape. |
| **PT\_MasterSubTitle** | 0x04 | Master sub-title text placeholder shape. |
| **PT\_MasterNotesSlideImage** | 0x05 | Master notes slide image placeholder shape. |
| **PT\_MasterNotesBody** | 0x06 | Master notes body text placeholder shape. |
| **PT\_MasterDate** | 0x07 | Master date placeholder shape. |
| **PT\_MasterSlideNumber** | 0x08 | Master slide number placeholder shape. |
| **PT\_MasterFooter** | 0x09 | Master footer placeholder shape. |
| **PT\_MasterHeader** | 0x0A | Master header placeholder shape. |
| **PT\_NotesSlideImage** | 0x0B | Notes slide image placeholder shape. |
| **PT\_NotesBody** | 0x0C | Notes body text placeholder shape. |
| **PT\_Title** | 0x0D | Title text placeholder shape. |
| **PT\_Body** | 0x0E | Body text placeholder shape. |
| **PT\_CenterTitle** | 0x0F | Center title text placeholder shape. |
| **PT\_SubTitle** | 0x10 | Sub-title text placeholder shape. |
| **PT\_VerticalTitle** | 0x11 | Vertical title text placeholder shape. |
| **PT\_VerticalBody** | 0x12 | Vertical body text placeholder shape. |
| **PT\_Object** | 0x13 | Object placeholder shape. |
| **PT\_Graph** | 0x14 | Graph object placeholder shape. |
| **PT\_Table** | 0x15 | Table object placeholder shape. |
| **PT\_ClipArt** | 0x16 | Clipart object placeholder shape. |
| **PT\_OrgChart** | 0x17 | Organization chart object placeholder shape. |
| **PT\_Media** | 0x18 | Media object placeholder shape. |
| **PT\_VerticalObject** | 0x19 | Vertical object placeholder shape. |
| **PT\_Picture** | 0x1A | Picture object placeholder shape. |

### PlaceholderSize

*Referenced by:* [*PlaceholderAtom*](#Section_5a37fba11e7045d8bda4315730bd3c54)

An enumeration that specifies the preferred size of a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2). The size is relative to the size of the master body text placeholder shape.

| Name | Value | Meaning |
| --- | --- | --- |
| **PS\_Full** | 0x00 | The full size of the master body text placeholder shape. |
| **PS\_Half** | 0x01 | Half of the size of the master body text placeholder shape. |
| **PS\_Quarter** | 0x02 | A quarter of the size of the master body text placeholder shape. |

### PrintWhatEnum

*Referenced by:* [*PrintOptionsAtom*](#Section_38013adecfee4bbda443d84822a80173)

An enumeration that specifies which aspect of the presentation to print.

| Name | Value | Meaning |
| --- | --- | --- |
| **PW\_Slides** | 0x00 | The [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192). |
| **PW\_BuildSlides** | 0x01 | The presentation slides plus extra images showing the steps of animations. |
| **PW\_Handouts2** | 0x02 | A layout optimized for [**handout slides**](#gt_e15bbb8a-d7cc-4e8e-8d62-98e37e8e187f) where two slides are shown per page. |
| **PW\_Handouts3** | 0x03 | A layout optimized for handout slides where three slides are shown per page. |
| **PW\_Handouts6** | 0x04 | A layout optimized for handout slides where six slides are shown per page. |
| **PW\_Notes** | 0x05 | The presentation slides plus the attached notes. |
| **PW\_Outline** | 0x06 | The text outline of the presentation. |
| **PW\_Handouts4** | 0x07 | A layout optimized for handout slides where four slides are shown per page. |
| **PW\_Handouts9** | 0x08 | A layout optimized for handout slides where nine slides are shown per page. |
| **PW\_Handouts1** | 0x09 | A layout optimized for handout slides where one slide is shown per page. |

### RecordType

*Referenced by:* [*RecordHeader*](#Section_df2011940cd04dfbbf10eea353d8eabc)

An enumeration that specifies the record type of an [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) or a [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d).

| Name | Value | Meaning |
| --- | --- | --- |
| **RT\_Document** | 0x03E8 | Specifies a **DocumentContainer** (section [2.4.1](#Section_6254c4d152174e16b20dc04ddcce31c9)). |
| **RT\_DocumentAtom** | 0x03E9 | Specifies a **DocumentAtom** (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)). |
| **RT\_EndDocumentAtom** | 0x03EA | Specifies a **EndDocumentAtom** record (section [2.4.13](#Section_ac2a2b3b4ccc4f3ab17252dd742b5475)). |
| **RT\_Slide** | 0x03EE | Specifies a **SlideContainer** (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)). |
| **RT\_SlideAtom** | 0x03EF | Specifies a [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd). |
| **RT\_Notes** | 0x03F0 | Specifies a **NotesContainer** (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)). |
| **RT\_NotesAtom** | 0x03F1 | Specifies a [NotesAtom](#Section_9bb3e3521014477bb286cd43127c3b74). |
| **RT\_Environment** | 0x03F2 | Specifies a **DocumentTextInfoContainer** record (section [2.9.1](#Section_6a08728e04f84cc1831773cefa178870)). |
| **RT\_SlidePersistAtom** | 0x03F3 | Specifies a **MasterPersistAtom** (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)), **SlidePersistAtom** (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)), or **NotesPersistAtom** (section [2.4.14.7](#Section_b595ad14a46c4fccb4bd7298712043a4)). |
| **RT\_MainMaster** | 0x03F8 | Specifies a **MainMasterContainer** (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)). |
| **RT\_SlideShowSlideInfoAtom** | 0x03F9 | Specifies a [SlideShowSlideInfoAtom](#Section_10dc4455c5d8472086468cde8644a040). |
| **RT\_SlideViewInfo** | 0x03FA | Specifies a **SlideViewInfoContainer** (section [2.4.21.9](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)) or **NotesViewInfoContainer** (section [2.4.21.12](#Section_96636c7591464d128099f0f50e382b71)). |
| **RT\_GuideAtom** | 0x03FB | Specifies a [GuideAtom](#Section_b5cc09d93f104eabb204ba88552dc1ec). |
| **RT\_ViewInfoAtom** | 0x03FD | Specifies a [ZoomViewInfoAtom](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) or [NoZoomViewInfoAtom](#Section_377e8d7886934fecb31caa890909f4b3). |
| **RT\_SlideViewInfoAtom** | 0x03FE | Specifies a [SlideViewInfoAtom](#Section_bb7145715b154cd8a28c4437c4e1ad15). |
| **RT\_VbaInfo** | 0x03FF | Specifies a **VBAInfoContainer** (section [2.4.10](#Section_ca0b2c2bb1f8429890bd45296415f0a6)). |
| **RT\_VbaInfoAtom** | 0x0400 | Specifies a [VBAInfoAtom](#Section_93d20ef2151443f9901c50c56d3a3073). |
| **RT\_SlideShowDocInfoAtom** | 0x0401 | Specifies a **SlideShowDocInfoAtom** record (section [2.6.1](#Section_6d266473cadd49ada3cb9f3601365b9e)). |
| **RT\_Summary** | 0x0402 | Specifies a **SummaryContainer** record (section [2.4.22.3](#Section_446dee5f73d04ea3bc6d04afeadfd6e8)). |
| **RT\_DocRoutingSlipAtom** | 0x0406 | Specifies a **DocRoutingSlipAtom** record (section [2.11.1](#Section_8dbe7f1cb2374383a9931a67e660faf0)). |
| **RT\_OutlineViewInfo** | 0x0407 | Specifies an **OutlineViewInfoContainer** (section [2.4.21.6](#Section_39073741a8dd47bdb94f857a2850ff62)). |
| **RT\_SorterViewInfo** | 0x0408 | Specifies a **SorterViewInfoContainer** record (section [2.4.21.13](#Section_7184066996c54d7a9a9aeb5184c1626e)). |
| **RT\_ExternalObjectList** | 0x0409 | Specifies an **ExObjListContainer** (section [2.10.1](#Section_3b997d4d79514478acc51c9adbc2627a)). |
| **RT\_ExternalObjectListAtom** | 0x040A | Specifies an [ExObjListAtom](#Section_ebd9be5b3df44c2c99ba84923f01a322). |
| **RT\_DrawingGroup** | 0x040B | Specifies a **DrawingGroupContainer** (section [2.4.3](#Section_1daf91b135314e55ba6a2e271de975c0)). |
| **RT\_Drawing** | 0x040C | Specifies a **DrawingContainer** (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)). |
| **RT\_GridSpacing10Atom** | 0x040D | Specifies a [GridSpacing10Atom](#Section_e40174dc118f46c38c6198f63d426f44). |
| **RT\_RoundTripTheme12Atom** | 0x040E | Specifies a [RoundTripThemeAtom](#Section_a50e597e248a41c8a1c370fd0988d609). |
| **RT\_RoundTripColorMapping12Atom** | 0x040F | Specifies a [RoundTripColorMappingAtom](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a). |
| **RT\_NamedShows** | 0x0410 | Specifies a **NamedShowsContainer** (section [2.6.2](#Section_a3d04187565b423f90c637d219781b0c)). |
| **RT\_NamedShow** | 0x0411 | Specifies a [NamedShowContainer](#Section_a397a8a306f54fe780ea10ead0e1aeb0). |
| **RT\_NamedShowSlidesAtom** | 0x0412 | Specifies a [NamedShowSlidesAtom](#Section_b90394d690dd4557900ec250d1bfc4f9). |
| **RT\_NotesTextViewInfo9** | 0x0413 | Specifies a **NotesTextViewInfoContainer** (section [2.4.21.4](#Section_caacc34d988c4cbc99f7a4bdf808e723)). |
| **RT\_NormalViewSetInfo9** | 0x0414 | Specifies a **NormalViewSetInfoContainer** (section [2.4.21.2](#Section_5b7a13338de24c50a83838c389db3147)). |
| **RT\_NormalViewSetInfo9Atom** | 0x0415 | Specifies a [NormalViewSetInfoAtom](#Section_b906d23a45d244a2b486545f21676ecd). |
| **RT\_RoundTripOriginalMainMasterId12Atom** | 0x041C | Specifies a [RoundTripOriginalMainMasterId12Atom](#Section_4ffb4a9b891a41e689cdfd4312d08c90). |
| **RT\_RoundTripCompositeMasterId12Atom** | 0x041D | Specifies a [RoundTripCompositeMasterId12Atom](#Section_ae0701f92b464b6c90a049e7cfb20a7e). |
| **RT\_RoundTripContentMasterInfo12Atom** | 0x041E | Specifies a [RoundTripContentMasterInfo12Atom](#Section_15e1aa8993ac4f248e0e398ecec7897b). |
| **RT\_RoundTripShapeId12Atom** | 0x041F | Specifies a [RoundTripShapeId12Atom](#Section_a3e1963983784a1582db7453be42ddbe). |
| **RT\_RoundTripHFPlaceholder12Atom** | 0x0420 | Specifies a [RoundTripHFPlaceholder12Atom](#Section_ec3baf39684b49d38850d5798f0a1915). |
| **RT\_RoundTripContentMasterId12Atom** | 0x0422 | Specifies a [RoundTripContentMasterId12Atom](#Section_e9a4f7c3f3ac4ba2b94c59a93f77d11b). |
| **RT\_RoundTripOArtTextStyles12Atom** | 0x0423 | Specifies a [RoundTripOArtTextStyles12Atom](#Section_92f10e186be94cc19e22fb24856f80d7). |
| **RT\_RoundTripHeaderFooterDefaults12Atom** | 0x0424 | Specifies a [RoundTripHeaderFooterDefaults12Atom](#Section_016741fdd7aa4958b577c81fe19c179b). |
| **RT\_RoundTripDocFlags12Atom** | 0x0425 | Specifies a [RoundTripDocFlags12Atom](#Section_97f683aea7b2430cb4e49b1cc518f35d). |
| **RT\_RoundTripShapeCheckSumForCL12Atom** | 0x0426 | Specifies a RoundTripShapeCheckSumForCustomLayouts12Atom. |
| **RT\_RoundTripNotesMasterTextStyles12Atom** | 0x0427 | Specifies a [RoundTripNotesMasterTextStyles12Atom](#Section_50f47937dbe0403eb93ed170d9b6ea0d). |
| **RT\_RoundTripCustomTableStyles12Atom** | 0x0428 | Specifies a **RoundTripCustomTableStyles12Atom** record (section [2.11.13](#Section_fdb1834fa6d8409f83422152025ae8eb)). |
| **RT\_List** | 0x07D0 | Specifies a **DocInfoListContainer** (section [2.4.4](#Section_f0fed863362f43a0ae7872ae15e56171)). |
| **RT\_FontCollection** | 0x07D5 | Specifies a **FontCollectionContainer** (section [2.9.8](#Section_88da04bf68384f879a87adf067543837)). |
| **RT\_FontCollection10** | 0x07D6 | Specifies a **FontCollection10Container** (section [2.9.11](#Section_8c62fed6394f4c49ae8aa73c2a8026d1)). |
| **RT\_BookmarkCollection** | 0x07E3 | Specifies a [BookmarkCollectionContainer](#Section_7effe2aab7ab4318884b5b19c12e0ec7). |
| **RT\_SoundCollection** | 0x07E4 | Specifies a **SoundCollectionContainer** record (section [2.4.16.1](#Section_8b25294d1485419fa85f48580b8cfbef)). |
| **RT\_SoundCollectionAtom** | 0x07E5 | Specifies a [SoundCollectionAtom](#Section_e74f6ee22f184b8e8ba514594f5121ae). |
| **RT\_Sound** | 0x07E6 | Specifies a **SoundContainer** (section [2.4.16.3](#Section_8c5498fa18324659a02bd23e28ef21b3)). |
| **RT\_SoundDataBlob** | 0x07E7 | Specifies a [SoundDataBlob](#Section_e28036d86cea4142b823ed856b87eb52). |
| **RT\_BookmarkSeedAtom** | 0x07E9 | Specifies a [BookmarkSeedAtom](#Section_0fc3da910db242eb9128ca850db20ab6). |
| **RT\_ColorSchemeAtom** | 0x07F0 | Specifies a [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) or [SchemeListElementColorSchemeAtom](#Section_cf7562a6f79f4705a2fb5f5d84bea12d). |
| **RT\_BlipCollection9** | 0x07F8 | Specifies a **BlipCollection9Container** (section [2.9.72](#Section_8a93931e05c148be8824deb1c4489c14)). |
| **RT\_BlipEntity9Atom** | 0x07F9 | Specifies a [BlipEntityAtom](#Section_f1aeacfe24af425c8bb13333b4f8e7f6). |
| **RT\_ExternalObjectRefAtom** | 0x0BC1 | Specifies an [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f). |
| **RT\_PlaceholderAtom** | 0x0BC3 | Specifies a [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54). |
| **RT\_ShapeAtom** | 0x0BDB | Specifies a [ShapeFlagsAtom](#Section_87961734a0f44ba6b4d7cb28d7d6ee78). |
| **RT\_ShapeFlags10Atom** | 0x0BDC | Specifies a [ShapeFlags10Atom](#Section_8eb485b34df1413cbb3264ce5064054d). |
| **RT\_RoundTripNewPlaceholderId12Atom** | 0x0BDD | Specifies a [RoundTripNewPlaceholderId12Atom](#Section_c13cfcfdd6964aecb1f2eafb3bd3977b). |
| **RT\_OutlineTextRefAtom** | 0x0F9E | Specifies an [OutlineTextRefAtom](#Section_f120afe11b654deca2cec5f90fe8b317). |
| **RT\_TextHeaderAtom** | 0x0F9F | Specifies a [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178). |
| **RT\_TextCharsAtom** | 0x0FA0 | Specifies a [TextCharsAtom](#Section_a3c5c8d5e5304167a2427743bc99aeac). |
| **RT\_StyleTextPropAtom** | 0x0FA1 | Specifies a [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100). |
| **RT\_MasterTextPropAtom** | 0x0FA2 | Specifies a [MasterTextPropAtom](#Section_c80e1825db844e21a3d717068b1248c2). |
| **RT\_TextMasterStyleAtom** | 0x0FA3 | Specifies a [TextMasterStyleAtom](#Section_5febad270c484f98b655562b986f5874). |
| **RT\_TextCharFormatExceptionAtom** | 0x0FA4 | Specifies a [TextCFExceptionAtom](#Section_1130b69a13264feda16556ef29921312). |
| **RT\_TextParagraphFormatExceptionAtom** | 0x0FA5 | Specifies a [TextPFExceptionAtom](#Section_ec7fbd0dcb3347ad94dc41788732df14). |
| **RT\_TextRulerAtom** | 0x0FA6 | Specifies a [TextRulerAtom](#Section_e8487b82d9664193a6752b39f4adf647). |
| **RT\_TextBookmarkAtom** | 0x0FA7 | Specifies a [TextBookmarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1). |
| **RT\_TextBytesAtom** | 0x0FA8 | Specifies a [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7). |
| **RT\_TextSpecialInfoDefaultAtom** | 0x0FA9 | Specifies a [TextSIExceptionAtom](#Section_4713a7ea63624fd88231a32637a6c3d2). |
| **RT\_TextSpecialInfoAtom** | 0x0FAA | Specifies a [TextSpecialInfoAtom](#Section_382afea69dc34b6c820611abef8b8366). |
| **RT\_DefaultRulerAtom** | 0x0FAB | Specifies a [DefaultRulerAtom](#Section_f126079c590540fbb2d70f478adb44b8). |
| **RT\_StyleTextProp9Atom** | 0x0FAC | Specifies a [StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f). |
| **RT\_TextMasterStyle9Atom** | 0x0FAD | Specifies a [TextMasterStyle9Atom](#Section_7e0b6a7e059145769dd02305bd8c0323). |
| **RT\_OutlineTextProps9** | 0x0FAE | Specifies an [OutlineTextProps9Container](#Section_6eb16c7f6b6848dbace37347326b3a9d). |
| **RT\_OutlineTextPropsHeader9Atom** | 0x0FAF | Specifies an [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96). |
| **RT\_TextDefaults9Atom** | 0x0FB0 | Specifies a [TextDefaults9Atom](#Section_ab49e0370973424eb155250559a98723). |
| **RT\_StyleTextProp10Atom** | 0x0FB1 | Specifies a [StyleTextProp10Atom](#Section_663f260adf984185b4fdf092d3826548). |
| **RT\_TextMasterStyle10Atom** | 0x0FB2 | Specifies a [TextMasterStyle10Atom](#Section_72dd8636450c451fa60d9faddcff72be). |
| **RT\_OutlineTextProps10** | 0x0FB3 | Specifies an [OutlineTextProps10Container](#Section_6efc6c99ea7546fc8b36ea94a8e3077f). |
| **RT\_TextDefaults10Atom** | 0x0FB4 | Specifies a [TextDefaults10Atom](#Section_43975b61904e46c38d4bec08ed1fcb22). |
| **RT\_OutlineTextProps11** | 0x0FB5 | Specifies an [OutlineTextProps11Container](#Section_bd93329d5087408e99027355d31ec82e). |
| **RT\_StyleTextProp11Atom** | 0x0FB6 | Specifies a [StyleTextProp11Atom](#Section_b0e6e86508654d1bb5d3a2a805725915). |
| **RT\_FontEntityAtom** | 0x0FB7 | Specifies a [FontEntityAtom](#Section_b5946b702fbc4f7ba119b31fcbeb1794). |
| **RT\_FontEmbedDataBlob** | 0x0FB8 | Specifies a [FontEmbedDataBlob](#Section_09f6010a4a6d4ba7a05a1acab10322fd). |
| **RT\_CString** | 0x0FBA | Specifies a [KinsokuLeadingAtom](#Section_2a0209cc48b34505a201853c17e88d65), [KinsokuFollowingAtom](#Section_009ecdc1817c4fb0a286eebd73f8fd06), [NamedShowNameAtom](#Section_41443c4148f440d58ec7e9306d25545c), [MacroNameAtom](#Section_7f850503c5444c8798172f1368632b70), [UncOrLocalPathAtom](#Section_b376f887227b4f538600fa036403ce05), [MenuNameAtom](#Section_39e69a141c4649deaab4ac78485c6de1), [ProgIDAtom](#Section_4bfdd228254e40aba4970e0407079fd0), [ClipboardNameAtom](#Section_203232fa72dd465b81cd48cda50d3865), [FriendlyNameAtom](#Section_e8e62224b3be43b9b97a658257d6af67), [TargetAtom](#Section_6a84616800154544a3c345f56e9577d8), [LocationAtom](#Section_6c05ffebaacd422bb931ec7b3e8b1ee3), [ScreenTipAtom](#Section_d2e1c18127b841e088ef702c287fda1b), [PP9ShapeBinaryTagExtension](#Section_288d4b7c200a4fbfbfcbe60adba13db8), [PP10ShapeBinaryTagExtension](#Section_a5850b953d584723b94902c802af528d), [PP11ShapeBinaryTagExtension](#Section_ab3d45de5d374cd69bece6983b085ad9), [SlideNameAtom](#Section_3b52355ff13f4a20b967be4b42dc6ac5), [TemplateNameAtom](#Section_cebe780b49ee491b81a10f90d3872e03), [PP9SlideBinaryTagExtension](#Section_0ee9570b80ec46f0889aec42dad58baf), [PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17), [Comment10AuthorAtom](#Section_e6a12f24381941caa4c6df5065ca75ec), [Comment10TextAtom](#Section_509e23de68384693b586dace9899c2c8), [Comment10AuthorInitialAtom](#Section_e4516e96f95c43589e69c7e58ef19061), [PP12SlideBinaryTagExtension](#Section_1d1704d76e3e472296c70fbe7ca8f682), [SoundNameAtom](#Section_f593b2eb8e414e02aed5143e2f109497), [PP9DocBinaryTagExtension](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0), [FileNameAtom](#Section_2b13333268de4f7ab42d96bc0f130818), [NamedShowAtom](#Section_5962eaa99cc04996b9020b4477790727), [BCTitleAtom](#Section_b23020bf56be4dcbac021f5c1810a9fe), [BCDescriptionAtom](#Section_ec0f01d0a3b3455eae9b2442a78c67f7), [BCSpeakerAtom](#Section_813f0adc905c479293646eb4084ee5f1), [BCContactAtom](#Section_2c5c4e52addc40249d72817236b04f86), [BCRexServerNameAtom](#Section_4a10f915e5434368811fd601ead00716), [BCEmailAddressAtom](#Section_d01fcb8e7c574d7aa8e3c906e8afcd6f), [BCEmailNameAtom](#Section_1305677b209947069db3eb4133841122), [BCChatUrlAtom](#Section_c8b8114bc07849078613e759997bb455), [BCArchiveDirAtom](#Section_cfc1123f2cae404789d19f70b21c7d37), [BCNetShowFilesBaseDirAtom](#Section_6c370c4420db41d687ce9cd5cfdb03bb), [BCNetShowFilesDirAtom](#Section_3029ca8ef20642db97c961fa0b6a8673), [BCNetShowServerNameAtom](#Section_794f6bfb3a6242fe997c299758084615), [BCPptFilesBaseDirAtom](#Section_3e60a89e381c41a581e6488d7a0fb58c), [BCPptFilesDirAtom](#Section_86cd0cd5cc864029ad7d6fd3b90ecf04), [BCPptFilesBaseUrlAtom](#Section_b43dce86be6042cda1cec6d7bd9b9c06), [BCBroadcastDateTimeAtom](#Section_559aeb29dff8469780778f6a81f8e02b), [BCPresentationNameAtom](#Section_2e98de7a7bb14660aac57b7cc6b5fca0), [BCAsdFileNameAtom](#Section_b7946e738685414aae7bb6aaa9011808), [BCEntryIDAtom](#Section_87a49d205b7640cba4df1cbd507c42fe), [PP10DocBinaryTagExtension](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed), [AuthorNameAtom](#Section_7b27b62888e14066b7778b6fe9f43ae1), [CopyrightAtom](#Section_9d4029f9d39c4f59910ada60d75c46db), [KeywordsAtom](#Section_a549e2ed7f644b4a927ea22e76ffd213), [ModifyPasswordAtom](#Section_6d703306994647f4b206794ddb90585f), [ReviewerNameAtom](#Section_5aa53fdfa0794ce2a27fa1af7106a427), [PP11DocBinaryTagExtension](#Section_662c3a59f11d4d3fb472c695b4e598a8), [PP12DocBinaryTagExtension](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7), [UserDateAtom](#Section_59b1690f1aea4b12846f3a1bec342425), [HeaderAtom](#Section_bdda477db94d4a4ebe1c35f78f68821c), [FooterAtom](#Section_be36887533e9490db832954eb800a240), [BookmarkValueAtom](#Section_4dc746d99d91462396eaa1256e728534), [TagNameAtom](#Section_274ba042a7134d939542cc31967c0857), [TagValueAtom](#Section_11f5be351e644038bd7e6e6248f0b43f), [SoundExtensionAtom](#Section_9cd28f87c72244dcadc5ed72233e19cf), [SoundIdAtom](#Section_00d3b37fe99a43e0b5e8578c0c9a9a94), [SoundBuiltinIdAtom](#Section_430f8098998a4b9a8e9ef93b5d2dce08), [BCUserNameAtom](#Section_35dcadecfa5b43cbb611a77144bf576f), [ServerIdAtom](#Section_b008a1461e9e4e4aa0a39a6dd55bbf8a), or [SlideLibUrlAtom](#Section_4f0d845d959e4deea2d7a4701a51a0b9). |
| **RT\_MetaFile** | 0x0FC1 | Specifies a [MetafileBlob](#Section_743b32d37f84418091275d744ffb706b). |
| **RT\_ExternalOleObjectAtom** | 0x0FC3 | Specifies an **ExOleObjAtom** section [2.10.12](#Section_a35170168e3245859a42adae02eea798)). |
| **RT\_Kinsoku** | 0x0FC8 | Specifies a **KinsokuContainer** (section [2.9.2](#Section_d22fdfcfb0334a9ab4beabc379ad0039)) or **Kinsoku9Container** (section [2.9.6](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)). |
| **RT\_Handout** | 0x0FC9 | Specifies a **HandoutContainer** (section [2.5.8](#Section_bf6d1f839023412089c3fb69e49d0212)). |
| **RT\_ExternalOleEmbed** | 0x0FCC | Specifies an **ExOleEmbedContainer** (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229)). |
| **RT\_ExternalOleEmbedAtom** | 0x0FCD | Specifies an [ExOleEmbedAtom](#Section_003441ca0e10403b92c3ebcd7fcc6a07). |
| **RT\_ExternalOleLink** | 0x0FCE | Specifies an **ExOleLinkContainer** (section [2.10.29](#Section_5311e92722f04e559f439142998efbd1)). |
| **RT\_BookmarkEntityAtom** | 0x0FD0 | Specifies a [BookmarkEntityAtom](#Section_a2f2dfbe96e6466eb37b3310416a47ec) or [BookmarkEntityAtomContainer](#Section_ce4e89a1983e45e997040f804e1b84cd). |
| **RT\_ExternalOleLinkAtom** | 0x0FD1 | Specifies a [ExOleLinkAtom](#Section_d14ae8e499c34847941c7d7c258f7691). |
| **RT\_KinsokuAtom** | 0x0FD2 | Specifies a [KinsokuAtom](#Section_f4aeb62ddb3148ed9ab76369697a62b7) or [Kinsoku9Atom](#Section_1ad9ce1b530247c18706c137a541efe9). |
| **RT\_ExternalHyperlinkAtom** | 0x0FD3 | Specifies an **ExHyperlinkAtom** (section [2.10.17](#Section_c760a33c472f449cb1db5dc5fe59ace1)**)** or [ExHyperlinkRefAtom](#Section_37fa88095b274f9e95a669b633d191ea). |
| **RT\_ExternalHyperlink** | 0x0FD7 | Specifies an [ExHyperlinkContainer](#Section_3145d686e4e34eb2849f03c4cf410d42). |
| **RT\_SlideNumberMetaCharAtom** | 0x0FD8 | Specifies a [SlideNumberMCAtom](#Section_3f61519995ec48c0acb4dd98f0f29560). |
| **RT\_HeadersFooters** | 0x0FD9 | Specifies a **SlideHeadersFootersContainer** (section [2.4.15.1](#Section_c1ff52ebb70a4de3a03385eefc7a25a8)), **NotesHeadersFootersContainer** (section [2.4.15.6](#Section_58fe42d1259e4f809a342567c565125e)), or [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35). |
| **RT\_HeadersFootersAtom** | 0x0FDA | Specifies a [HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082). |
| **RT\_TextInteractiveInfoAtom** | 0x0FDF | Specifies a [MouseClickTextInteractiveInfoAtom](#Section_1efdc2bfa11d40928128147b3602be87) or [MouseOverTextInteractiveInfoAtom](#Section_93a2cd280426415da67fec6f3f781a09). |
| **RT\_ExternalHyperlink9** | 0x0FE4 | Specifies an [ExHyperlink9Container](#Section_c021ee00af9c4673bd69e3d49f3668df). |
| **RT\_RecolorInfoAtom** | 0x0FE7 | Specifies a [RecolorInfoAtom](#Section_01ac11fb62734b36932d39b861eb144c). |
| **RT\_ExternalOleControl** | 0x0FEE | Specifies an **ExControlContainer** (section [2.10.10](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)). |
| **RT\_SlideListWithText** | 0x0FF0 | Specifies a **MasterListWithTextContainer** (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)), **SlideListWithTextContainer** (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)), or **NotesListWithTextContainer** (section [2.4.14.6](#Section_55453e3706744703bd8dfcaba335f840)). |
| **RT\_AnimationInfoAtom** | 0x0FF1 | Specifies an [AnimationInfoAtom](#Section_4361cc1fcd514e61a451d252bf8e1069). |
| **RT\_InteractiveInfo** | 0x0FF2 | Specifies a [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) or [MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755). |
| **RT\_InteractiveInfoAtom** | 0x0FF3 | Specifies an [InteractiveInfoAtom](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7). |
| **RT\_UserEditAtom** | 0x0FF5 | Specifies a **UserEditAtom** (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)). |
| **RT\_CurrentUserAtom** | 0x0FF6 | Specifies a [CurrentUserAtom](#Section_940d5700e4d74fc0ab48fed5dbc48bc1). |
| **RT\_DateTimeMetaCharAtom** | 0x0FF7 | Specifies a [DateTimeMCAtom](#Section_668ab84bf0b24496af11b9d1b04e840a). |
| **RT\_GenericDateMetaCharAtom** | 0x0FF8 | Specifies a [GenericDateMCAtom](#Section_a212a37760444ec2a5948c59be237125). |
| **RT\_HeaderMetaCharAtom** | 0x0FF9 | Specifies a [HeaderMCAtom](#Section_d7ed28bf83ef45e5a57b2384f8b03423). |
| **RT\_FooterMetaCharAtom** | 0x0FFA | Specifies a [FooterMCAtom](#Section_5a2fa1e2bc5f450b89d0b372a811313a). |
| **RT\_ExternalOleControlAtom** | 0x0FFB | Specifies an [ExControlAtom](#Section_0a31df487ebb461a967e42003b8e91bd). |
| **RT\_ExternalMediaAtom** | 0x1004 | Specifies an **ExMediaAtom** (section [2.10.6](#Section_3239ce9f932f4e4f8299333e907a6ccc)). |
| **RT\_ExternalVideo** | 0x1005 | Specifies an [ExVideoContainer](#Section_342b66efd81d45c0aad3414545cb7ae4). |
| **RT\_ExternalAviMovie** | 0x1006 | Specifies an [ExAviMovieContainer](#Section_b434673370da4a3098d7b2e026d0d7cb). |
| **RT\_ExternalMciMovie** | 0x1007 | Specifies an [ExMCIMovieContainer](#Section_e6094ce87fb74c91aa111a02f1ee03d8). |
| **RT\_ExternalMidiAudio** | 0x100D | Specifies an [ExMIDIAudioContainer](#Section_43c4d032436f4108a9ae4ea1d339db8b). |
| **RT\_ExternalCdAudio** | 0x100E | Specifies an [ExCDAudioContainer](#Section_fbe8267c2370443c9d6499b24d4248e9). |
| **RT\_ExternalWavAudioEmbedded** | 0x100F | Specifies an [ExWAVAudioEmbeddedContainer](#Section_2b70ee326217416b8841540f51f8e3af). |
| **RT\_ExternalWavAudioLink** | 0x1010 | Specifies an [ExWAVAudioLinkContainer](#Section_e16f324952764f8fa4b4483f6aa08cf1). |
| **RT\_ExternalOleObjectStg** | 0x1011 | Specifies an [ExOleObjStgCompressedAtom](#Section_305e541f2c9149c5a7424955330fd2b9), [ExOleObjStgUncompressedAtom](#Section_23491dfff2694a5285129d7244d43cc8), [VbaProjectStgCompressedAtom](#Section_03882002995a42f4997ce9d1dce888b1), [VbaProjectStgUncompressedAtom](#Section_ca12ee80d3a6424f82ce56a927669fed), [ExControlStgUncompressedAtom](#Section_5ce0969f14574174b6cf845915d4f564), or [ExControlStgCompressedAtom](#Section_ed65e33859ad4e85ba8abad23a877120). |
| **RT\_ExternalCdAudioAtom** | 0x1012 | Specifies an [ExCDAudioAtom](#Section_4dfd1e1980134040848ea7ecdfa6bd00). |
| **RT\_ExternalWavAudioEmbeddedAtom** | 0x1013 | Specifies an [ExWAVAudioEmbeddedAtom](#Section_abc3f20816ed4945a8443eec428cc780). |
| **RT\_AnimationInfo** | 0x1014 | Specifies an [AnimationInfoContainer](#Section_a35de8fea76b43fc8e53ebcff8843705). |
| **RT\_RtfDateTimeMetaCharAtom** | 0x1015 | Specifies a [RTFDateTimeMCAtom](#Section_7aa3736d15cf43b38b450dddf856d946). |
| **RT\_ExternalHyperlinkFlagsAtom** | 0x1018 | Specifies an [ExHyperlinkFlagsAtom](#Section_55f45d4439fd404095061f14878ce2ac). |
| **RT\_ProgTags** | 0x1388 | Specifies a [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b), **DocProgTagsContainer** (section [2.4.23.1](#Section_6965e9a7d4314707b789081a6a9c7b8f)), or [ShapeProgTagsContainer](#Section_f8ad5874193e43f08400246b29b606bf). |
| **RT\_ProgStringTag** | 0x1389 | Specifies a [ProgStringTagContainer](#Section_4c2f2168082c433d8356471fa54af929). |
| **RT\_ProgBinaryTag** | 0x138A | Specifies a [SlideProgBinaryTagContainer](#Section_e25eb8d2627e4104b293fc8ed82a098c), [DocProgBinaryTagContainer](#Section_96d2ece1800548ebbbae0fd8f55f2f63), or [ShapeProgBinaryTagContainer](#Section_f72ef91182fc456d9392759ea3940516). |
| **RT\_BinaryTagDataBlob** | 0x138B | Specifies a PP9ShapeBinaryTagExtension, PP10ShapeBinaryTagExtension, PP11ShapeBinaryTagExtension, PP9DocBinaryTagExtension, PP10DocBinaryTagExtension, PP11DocBinaryTagExtension, PP12DocBinaryTagExtension, PP9SlideBinaryTagExtension, PP10SlideBinaryTagExtension, PP12SlideBinaryTagExtension, or [BinaryTagDataBlob](#Section_5eba9e3ad09a4d058e5bf148f44021a4). |
| **RT\_PrintOptionsAtom** | 0x1770 | Specifies a **PrintOptionsAtom** record (section [2.4.12](#Section_38013adecfee4bbda443d84822a80173)). |
| **RT\_PersistDirectoryAtom** | 0x1772 | Specifies a **PersistDirectoryAtom** (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)). |
| **RT\_PresentationAdvisorFlags9Atom** | 0x177A | Specifies a [PresAdvisorFlags9Atom](#Section_866dc2301b1947bca5a41160b18e846e). |
| **RT\_HtmlDocInfo9Atom** | 0x177B | Specifies an [HTMLDocInfo9Atom](#Section_9f9b9371093248ffa775cac417c466ef). |
| **RT\_HtmlPublishInfoAtom** | 0x177C | Specifies an [HTMLPublishInfoAtom](#Section_4296eeb2c07643a29a23bf645a2054c6). |
| **RT\_HtmlPublishInfo9** | 0x177D | Specifies an [HTMLPublishInfo9Container](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29). |
| **RT\_BroadcastDocInfo9** | 0x177E | Specifies a [BroadcastDocInfo9Container](#Section_e48938ffa37e4054ad394315cabbbfe0). |
| **RT\_BroadcastDocInfo9Atom** | 0x177F | Specifies a [BroadcastDocInfoAtom](#Section_53cdb990207c44bfaa2bb9852c84c0a1). |
| **RT\_EnvelopeFlags9Atom** | 0x1784 | Specifies an [EnvelopeFlags9Atom](#Section_692189fb057b48e6b195a7689e8e3c0f). |
| **RT\_EnvelopeData9Atom** | 0x1785 | Specifies an [EnvelopeData9Atom](#Section_a156cedf061d45678f2b0fa9cb08a7ee). |
| **RT\_VisualShapeAtom** | 0x2AFB | Specifies a [VisualSoundAtom](#Section_8cf2f3366e294368b5f1a21e8779f3af), [VisualShapeChartElementAtom](#Section_660780f345414850bae696b8ffa7d645), or [VisualShapeGeneralAtom](#Section_e3f4be5088fd43fdb68f82f2743e92ea). |
| **RT\_HashCodeAtom** | 0x2B00 | Specifies a [HashCode10Atom](#Section_bd2afac84f484071ba1a346546e1bee7). |
| **RT\_VisualPageAtom** | 0x2B01 | Specifies a [VisualPageAtom](#Section_4ecd8e2993c14393a31c80a8ccd529ce). |
| **RT\_BuildList** | 0x2B02 | Specifies a [BuildListContainer](#Section_48ffef8e5b8d4711a598cfa1f9fcb252). |
| **RT\_BuildAtom** | 0x2B03 | Specifies a [BuildAtom](#Section_baa3c302b96c4f0b851708c50c38952b). |
| **RT\_ChartBuild** | 0x2B04 | Specifies a [ChartBuildContainer](#Section_241274967eae4564825b186f6360ffcc). |
| **RT\_ChartBuildAtom** | 0x2B05 | Specifies a [ChartBuildAtom](#Section_f3f0965c0aaf43099601fc33308ff0aa). |
| **RT\_DiagramBuild** | 0x2B06 | Specifies a [DiagramBuildContainer](#Section_fb5d0358ee2644e8bf0e04d035401fd2). |
| **RT\_DiagramBuildAtom** | 0x2B07 | Specifies a [DiagramBuildAtom](#Section_f23973b309df492e99149cd331f8a5bc). |
| **RT\_ParaBuild** | 0x2B08 | Specifies a [ParaBuildContainer](#Section_4bd5c65e913445eead0d18b57d147c7e). |
| **RT\_ParaBuildAtom** | 0x2B09 | Specifies a [ParaBuildAtom](#Section_8eeb2908927340e8bb4330d07220ba58). |
| **RT\_LevelInfoAtom** | 0x2B0A | Specifies a [LevelInfoAtom](#Section_ada7819fc1d54331b64caba3db29ce4d). |
| **RT\_RoundTripAnimationAtom12Atom** | 0x2B0B | Specifies a [RoundTripAnimationAtom](#Section_6360395dcf04485a920324d5ae5591ec). |
| **RT\_RoundTripAnimationHashAtom12Atom** | 0x2B0D | Specifies a [RoundTripAnimationHashAtom](#Section_c10e75d664d04e53aa84a06134026ed4). |
| **RT\_Comment10** | 0x2EE0 | Specifies a [Comment10Container](#Section_1a15453d859f48ee8dcd4d51ab9227f8). |
| **RT\_Comment10Atom** | 0x2EE1 | Specifies a [Comment10Atom](#Section_75f276597c4b4bf3ad31d5e221c24494). |
| **RT\_CommentIndex10** | 0x2EE4 | Specifies a [CommentIndex10Container](#Section_0655d45268fc400fbb377a9157f09126). |
| **RT\_CommentIndex10Atom** | 0x2EE5 | Specifies a [CommentIndex10Atom](#Section_d86171f5075d481c9593151aee6465ff). |
| **RT\_LinkedShape10Atom** | 0x2EE6 | Specifies a [LinkedShape10Atom](#Section_4ad01f52581d4163b6cebd48fdeba54f). |
| **RT\_LinkedSlide10Atom** | 0x2EE7 | Specifies a [LinkedSlide10Atom](#Section_2a277bb42dbe493494c1004b7122ce4d). |
| **RT\_SlideFlags10Atom** | 0x2EEA | Specifies a [SlideFlags10Atom](#Section_dcf6722b32014b61b109384b7f80f559). |
| **RT\_SlideTime10Atom** | 0x2EEB | Specifies a [SlideTime10Atom](#Section_d5e12b9941514c289d8652328381c974). |
| **RT\_DiffTree10** | 0x2EEC | Specifies a [DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75). |
| **RT\_Diff10** | 0x2EED | Specifies a [DocDiff10Container](#Section_3c109426135949a0a42d2a79bf6f0d90), [HeaderFooterDiffContainer](#Section_dc773f9fdf844d419f50b206d6662d50), [NamedShowListDiffContainer](#Section_fff0a29d98ff478cb460e2fbe000ab7e), [NamedShowDiffContainer](#Section_51d270c9772b4d1d865e585cd0b5d86c), [SlideListDiffContainer](#Section_1d3c490c38884f5d91e4cc059baf4a65), [MasterListDiffContainer](#Section_e4bc97ae22de423f8e2f333018ed65c0), [MainMasterDiffContainer](#Section_d9a1101e91ae43d7a5f9627c3e05f91a), [SlideDiffContainer](#Section_899d425cba9b4a3eb5ab64f65b2897f3), [ShapeListDiffContainer](#Section_21ff0b659bae474294bf5e4af99a6b1b), [ShapeDiffContainer](#Section_c1ec712373fc4f01a3085935234abe33), [TextDiffContainer](#Section_51f0806e0d314075b25784d19dbe6ca5), [RecolorInfoDiffContainer](#Section_f3301c55be65413c824042f97e72ae65), [ExternalObjectDiffContainer](#Section_abb251c1a17a419a8519e799dc1e4721), [InteractiveInfoDiffContainer](#Section_b3fac6098b6e4b67b7a200a41f8765d6), [TableDiffContainer](#Section_a3e432fbcc1547eebb2fc7f5838118e9), [SlideShowDiffContainer](#Section_68fde33d71a0419380509f0dbd2301de), [NotesDiffContainer](#Section_2414449c9ca34ad29aabe195e96ce4df), or [TableListDiffContainer](#Section_ca72b575025f4d6da4b6bcb00527b746). |
| **RT\_Diff10Atom** | 0x2EEE | Specifies a DocDiff10Container, HeaderFooterDiffContainer, NamedShowListDiffContainer, NamedShowDiffContainer, SlideListDiffContainer, MasterListDiffContainer, MainMasterDiffContainer, SlideDiffContainer, ShapeListDiffContainer, ShapeDiffContainer, TextDiffContainer, RecolorInfoDiffContainer, ExternalObjectDiffContainer, InteractiveInfoDiffContainer, TableDiffContainer, SlideShowDiffContainer, NotesDiffContainer, or TableListDiffContainer. |
| **RT\_SlideListTableSize10Atom** | 0x2EEF | Specifies a [SlideListTableSize10Atom](#Section_e0b1efea693c480fa45b857c54124a2a). |
| **RT\_SlideListEntry10Atom** | 0x2EF0 | Specifies a [SlideListEntry10Atom](#Section_29e7a9d4974845d6abaa921772ca43a3). |
| **RT\_SlideListTable10** | 0x2EF1 | Specifies a [SlideListTable10Container](#Section_42463f5b55c7457598467f4b412228aa). |
| **RT\_CryptSession10Container** | 0x2F14 | Specifies a **CryptSession10Container** (section [2.3.7](#Section_b096333444084621879aef9c54551fd8)). |
| **RT\_FontEmbedFlags10Atom** | 0x32C8 | Specifies a [FontEmbedFlags10Atom](#Section_ec7445456e724d648280d96ac7b28a04). |
| **RT\_FilterPrivacyFlags10Atom** | 0x36B0 | Specifies a [FilterPrivacyFlags10Atom](#Section_016a804e325546a7a353707c8232e542). |
| **RT\_DocToolbarStates10Atom** | 0x36B1 | Specifies a [DocToolbarStates10Atom](#Section_e7b4619ec9ca40da99c76b9cdfe472d7). |
| **RT\_PhotoAlbumInfo10Atom** | 0x36B2 | Specifies a [PhotoAlbumInfo2.4.9Atom](#Section_2782f287ec64433182bc63fb6eb8c98e). |
| **RT\_SmartTagStore11Container** | 0x36B3 | Specifies a **SmartTagStore11Container** (section [2.11.28](#Section_f6735fdfc53746fb82dfb509a9d80faa)). |
| **RT\_RoundTripSlideSyncInfo12** | 0x3714 | Specifies a [RoundTripSlideSyncInfo12Container](#Section_7ab552d5545048f6816b8cbc266d7803). |
| **RT\_RoundTripSlideSyncInfoAtom12** | 0x3715 | Specifies a [SlideSyncInfoAtom12](#Section_54c75042f4af4a228d8d59df15f87557). |
| **RT\_TimeConditionContainer** | 0xF125 | Specifies a **TimeConditionContainer** (section [2.8.75](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)). |
| **RT\_TimeNode** | 0xF127 | Specifies a [TimeNodeAtom](#Section_a6b40fd7decd4d6e991a10394458c6a8). |
| **RT\_TimeCondition** | 0xF128 | Specifies a [TimeConditionAtom](#Section_6d79388473f24b87b8b1a1b0e6310ad6). |
| **RT\_TimeModifier** | 0xF129 | Specifies a [TimeModifierAtom](#Section_bbfa8706196c4508934c8007a84773ea). |
| **RT\_TimeBehaviorContainer** | 0xF12A | Specifies a **TimeBehaviorContainer** (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)). |
| **RT\_TimeAnimateBehaviorContainer** | 0xF12B | Specifies a **TimeAnimateBehaviorContainer** (section [2.8.29](#Section_bc65cd1c14a74c0dbc2d192bab64a713)). |
| **RT\_TimeColorBehaviorContainer** | 0xF12C | Specifies a **TimeColorBehaviorContainer** (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)). |
| **RT\_TimeEffectBehaviorContainer** | 0xF12D | Specifies a **TimeEffectBehaviorContainer** (section [2.8.61](#Section_498a5d0f07254a06a7de7c67394e9146)). |
| **RT\_TimeMotionBehaviorContainer** | 0xF12E | Specifies a **TimeMotionBehaviorContainer** (section [2.8.63](#Section_40b9860a04a54946ae4b51fdd1176cec)). |
| **RT\_TimeRotationBehaviorContainer** | 0xF12F | Specifies a **TimeRotationBehaviorContainer** (section [2.8.65](#Section_2ef1f0c624534be7875ea1a7d7201580)). |
| **RT\_TimeScaleBehaviorContainer** | 0xF130 | Specifies a **TimeScaleBehaviorContainer** (section [2.8.67](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a)). |
| **RT\_TimeSetBehaviorContainer** | 0xF131 | Specifies a **TimeSetBehaviorContainer** (section [2.8.69](#Section_5428095fe4c443d0ad36b8b240e1338b)). |
| **RT\_TimeCommandBehaviorContainer** | 0xF132 | Specifies a **TimeCommandBehaviorContainer** (section [2.8.71](#Section_d188069b704c4f9d838898a7eb357f0f)). |
| **RT\_TimeBehavior** | 0xF133 | Specifies a [TimeBehaviorAtom](#Section_9f996c4a3780415c9a6771d323788f95). |
| **RT\_TimeAnimateBehavior** | 0xF134 | Specifies a [TimeAnimateBehaviorAtom](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe). |
| **RT\_TimeColorBehavior** | 0xF135 | Specifies a [TimeColorBehaviorAtom](#Section_82b99b3c9e2e43778bf326b0e69537a5). |
| **RT\_TimeEffectBehavior** | 0xF136 | Specifies a [TimeEffectBehaviorAtom](#Section_bf8ed545f2f548528ffb7b69c6ddc128). |
| **RT\_TimeMotionBehavior** | 0xF137 | Specifies a [TimeMotionBehaviorAtom](#Section_0c7cb657218342c8ae2e887766db0815). |
| **RT\_TimeRotationBehavior** | 0xF138 | Specifies a [TimeRotationBehaviorAtom](#Section_0fc7d6f315a0464b958c6bfdbf874050). |
| **RT\_TimeScaleBehavior** | 0xF139 | Specifies a [TimeScaleBehaviorAtom](#Section_4e1b5b50334d4aa5a00c4d95f087b148). |
| **RT\_TimeSetBehavior** | 0xF13A | Specifies a [TimeSetBehaviorAtom](#Section_f8876381cf7f4d2b9888965e2929c9dc). |
| **RT\_TimeCommandBehavior** | 0xF13B | Specifies a [TimeCommandBehaviorAtom](#Section_19b49fc55a7f4022ba930df4d5269bb3). |
| **RT\_TimeClientVisualElement** | 0xF13C | Specifies a **ClientVisualElementContainer** (section [2.8.44](#Section_80b3266a1fe64140acef0483ac355c89)). |
| **RT\_TimePropertyList** | 0xF13D | Specifies a **TimePropertyList4TimeNodeContainer** (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)) or [TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d). |
| **RT\_TimeVariantList** | 0xF13E | Specifies a **TimeStringListContainer** (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)). |
| **RT\_TimeAnimationValueList** | 0xF13F | Specifies a **TimeAnimationValueListContainer** (section [2.8.31](#Section_9177feba1a8140b8950dd1de63ae8ee7)). |
| **RT\_TimeIterateData** | 0xF140 | Specifies a [TimeIterateDataAtom](#Section_96e2df55a3be4175a8307dc3c3ae46ca). |
| **RT\_TimeSequenceData** | 0xF141 | Specifies a [TimeSequenceDataAtom](#Section_342b92a273df4b0b9878862f3532d570). |
| **RT\_TimeVariant** | 0xF142 | Specifies a [TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5), [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318), [TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c), [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c), [TimeDisplayType](#Section_4ce3979934b1456a9a21dc5dda7c0d21), [TimeMasterRelType](#Section_a55a946ac8df4659a2934fe3370e4706), [TimeSubType](#Section_ac877ddb3911491f8026d11051aa0b63), [TimeEffectID](#Section_35c58b5655324d778c3353a82efb5a89), [TimeEffectType](#Section_989fce31f9b845a8a358361ca53d7a3d), [TimeNodeTimeFilter](#Section_41a5d8b9c0014fecaf559903e8a7a482), [TimeEventFilter](#Section_a4433ce8d99e43a6999c1387161c610d), [TimeGroupID](#Section_da6bcd4790ea44a692a0aeca9c2864e4), [TimeEffectNodeType](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed), [TimeColorModel](#Section_3c4894dddd604fde8e92a0d9bcd730ff), [TimeColorDirection](#Section_0299e331262745c59fe0541de33dcaa8), [TimeOverride](#Section_20ce9a318eaa4a42b957b9111be76b2c), [TimeRuntimeContext](#Section_4c48cb5aae834962a0ac994008e08193), or [TimePointsTypes](#Section_1656e976a2c14a19a9e9dccd516f24af). |
| **RT\_TimeAnimationValue** | 0xF143 | Specifies a [TimeAnimationValueAtom](#Section_65496e4f4e9743beb68e4f1355f41aa3). |
| **RT\_TimeExtTimeNodeContainer** | 0xF144 | Specifies an **ExtTimeNodeContainer** (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)). |
| **RT\_TimeSubEffectContainer** | 0xF145 | Specifies a [SubEffectContainer](#Section_8f1586ac86864bda9ba58cc43ba91642). |

### SlideLayoutType

*Referenced by:* [*SlideAtom*](#Section_57e11e6ce5504c4380b672731eee8abd)

An enumeration that specifies the [**slide layout**](#gt_b9667f9b-1779-4d8f-bd72-a9c9e4974107) of a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc).

| Name | Value | Meaning |
| --- | --- | --- |
| **SL\_TitleSlide** | 0x00000000 | One title and one subtitle [**placeholder shapes**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2). |
| **SL\_TitleBody** | 0x00000001 | [**Presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) or [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d) layout with one title and one body placeholder shape. |
| **SL\_MasterTitle** | 0x00000002 | [**Title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e) layout with one title and one subtitle placeholder shape. |
| **SL\_TitleOnly** | 0x00000007 | Presentation slide layout with one title placeholder shape. |
| **SL\_TwoColumns** | 0x00000008 | Presentation slide layout with one title and two body placeholder shapes stacked horizontally. |
| **SL\_TwoRows** | 0x00000009 | Presentation slide layout with one title and two body placeholder shapes stacked vertically. |
| **SL\_ColumnTwoRows** | 0x0000000A | Presentation slide layout with one title and three body placeholder shapes split into two columns. The right column has two rows. |
| **SL\_TwoRowsColumn** | 0x0000000B | Presentation slide layout with one title and three body placeholder shapes split into two columns. The left column has two rows. |
| **SL\_TwoColumnsRow** | 0x0000000D | Presentation slide layout with one title and three body placeholder shapes split into two rows. The top row has two columns. |
| **SL\_FourObjects** | 0x0000000E | Presentation slide layout with one title and four bodyplaceholder shapes. |
| **SL\_BigObject** | 0x0000000F | Presentation slide layout with one body placeholder shape. |
| **SL\_Blank** | 0x00000010 | Presentation slide layout with no placeholder shape. |
| **SL\_VerticalTitleBody** | 0x00000011 | Presentation slide layout with a vertical title placeholder shape on the right and a body placeholder shape on the left. |
| **SL\_VerticalTwoRows** | 0x00000012 | Presentation slide layout with a vertical title placeholder shape on the right and two body placeholder shapes in two columns on the left. |

### SlideSizeEnum

*Referenced by:* [*DocumentAtom*](#Section_121f272834974a0a829e6f416fee2ee6)

An enumeration that specifies types of slide sizes.

| Name | Value | Meaning |
| --- | --- | --- |
| **SS\_Screen** | 0x0000 | Slide size ratio is consistent with a computer screen. |
| **SS\_LetterPaper** | 0x0001 | Slide size ratio is consistent with letter paper. |
| **SS\_A4Paper** | 0x0002 | Slide size ratio is consistent with A4 paper. |
| **SS\_35mm** | 0x0003 | Slide size ratio is consistent with 35mm photo slides. |
| **SS\_Overhead** | 0x0004 | Slide size ratio is consistent with overhead projector slides. |
| **SS\_Banner** | 0x0005 | Slide size ratio is consistent with a banner. |
| **SS\_Custom** | 0x0006 | Slide size ratio that is not consistent with any of the other specified slide sizes in this enumeration. |

### TextAlignmentEnum

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

An enumeration that specifies paragraph alignments.

| Name | Value | Meaning |
| --- | --- | --- |
| **Tx\_ALIGNLeft** | 0x0000 | For horizontal text, left aligned.  For vertical text, top aligned. |
| **Tx\_ALIGNCenter** | 0x0001 | For horizontal text, centered.  For vertical text, middle aligned. |
| **Tx\_ALIGNRight** | 0x0002 | For horizontal text, right aligned.  For vertical text, bottom aligned. |
| **Tx\_ALIGNJustify** | 0x0003 | For horizontal text, flush left and right.  For vertical text, flush top and bottom. |
| **Tx\_ALIGNDistributed** | 0x0004 | Distribute space between characters. |
| **Tx\_ALIGNThaiDistributed** | 0x0005 | Thai distribution justification. |
| **Tx\_ALIGNJustifyLow** | 0x0006 | Kashida justify low. |

### TextAutoNumberSchemeEnum

*Referenced by:* [*TextAutoNumberScheme*](#Section_161f5b5d336545eb9b1c0bf8a7190287)

An enumeration that specifies the character sequence and delimiters to use for automatic numbering.

| Name | Value | Meaning |
| --- | --- | --- |
| **ANM\_AlphaLcPeriod** | 0x0000 | Lowercase Latin character followed by a period.  Example: a., b., c., … |
| **ANM\_AlphaUcPeriod** | 0x0001 | Uppercase Latin character followed by a period.  Example: A., B., C., … |
| **ANM\_ArabicParenRight** | 0x0002 | Arabic numeral followed by a closing parenthesis.  Example: 1), 2), 3), … |
| **ANM\_ArabicPeriod** | 0x0003 | Arabic numeral followed by a period.  Example: 1., 2., 3., … |
| **ANM\_RomanLcParenBoth** | 0x0004 | Lowercase Roman numeral enclosed in parentheses.  Example: (i), (ii), (iii), … |
| **ANM\_RomanLcParenRight** | 0x0005 | Lowercase Roman numeral followed by a closing parenthesis.  Example: i), ii), iii), … |
| **ANM\_RomanLcPeriod** | 0x0006 | Lowercase Roman numeral followed by a period.  Example: i., ii., iii., … |
| **ANM\_RomanUcPeriod** | 0x0007 | Uppercase Roman numeral followed by a period.  Example: I., II., III., … |
| **ANM\_AlphaLcParenBoth** | 0x0008 | Lowercase alphabetic character enclosed in parentheses.  Example: (a), (b), (c), … |
| **ANM\_AlphaLcParenRight** | 0x0009 | Lowercase alphabetic character followed by a closing parenthesis.  Example: a), b), c), … |
| **ANM\_AlphaUcParenBoth** | 0x000A | Uppercase alphabetic character enclosed in parentheses.  Example: (A), (B), (C), … |
| **ANM\_AlphaUcParenRight** | 0x000B | Uppercase alphabetic character followed by a closing parenthesis.  Example: A), B), C), … |
| **ANM\_ArabicParenBoth** | 0x000C | Arabic numeral enclosed in parentheses.  Example: (1), (2), (3), … |
| **ANM\_ArabicPlain** | 0x000D | Arabic numeral.  Example: 1, 2, 3, … |
| **ANM\_RomanUcParenBoth** | 0x000E | Uppercase Roman numeral enclosed in parentheses.  Example: (I), (II), (III), … |
| **ANM\_RomanUcParenRight** | 0x000F | Uppercase Roman numeral followed by a closing parenthesis.  Example: I), II), III), … |
| **ANM\_ChsPlain** | 0x0010 | Simplified Chinese. |
| **ANM\_ChsPeriod** | 0x0011 | Simplified Chinese with single-byte period. |
| **ANM\_CircleNumDBPlain** | 0x0012 | Double byte circle numbers. |
| **ANM\_CircleNumWDBWhitePlain** | 0x0013 | Wingdings white circle numbers. |
| **ANM\_CircleNumWDBBlackPlain** | 0x0014 | Wingdings black circle numbers. |
| **ANM\_ChtPlain** | 0x0015 | Traditional Chinese. |
| **ANM\_ChtPeriod** | 0x0016 | Traditional Chinese with single-byte period. |
| **ANM\_Arabic1Minus** | 0x0017 | Bidi Arabic 1 (AraAlpha) with ANSI minus symbol. |
| **ANM\_Arabic2Minus** | 0x0018 | Bidi Arabic 2 (AraAbjad) with ANSI minus symbol. |
| **ANM\_Hebrew2Minus** | 0x0019 | Bidi Hebrew 2 with ANSI minus symbol. |
| **ANM\_JpnKorPlain** | 0x001A | Japanese/Korean. |
| **ANM\_JpnKorPeriod** | 0x001B | Japanese/Korean with single-byte period. |
| **ANM\_ArabicDbPlain** | 0x001C | Double-byte Arabic numbers. |
| **ANM\_ArabicDbPeriod** | 0x001D | Double-byte Arabic numbers with double-byte period. |
| **ANM\_ThaiAlphaPeriod** | 0x001E | Thai alphabetic character followed by a period. |
| **ANM\_ThaiAlphaParenRight** | 0x001F | Thai alphabetic character followed by a closing parenthesis. |
| **ANM\_ThaiAlphaParenBoth** | 0x0020 | Thai alphabetic character enclosed by parentheses. |
| **ANM\_ThaiNumPeriod** | 0x0021 | Thai numeral followed by a period. |
| **ANM\_ThaiNumParenRight** | 0x0022 | Thai numeral followed by a closing parenthesis. |
| **ANM\_ThaiNumParenBoth** | 0x0023 | Thai numeral enclosed in parentheses. |
| **ANM\_HindiAlphaPeriod** | 0x0024 | Hindi alphabetic character followed by a period. |
| **ANM\_HindiNumPeriod** | 0x0025 | Hindi numeric character followed by a period. |
| **ANM\_JpnChsDBPeriod** | 0x0026 | Japanese with double-byte period. |
| **ANM\_HindiNumParenRight** | 0x0027 | Hindi numeric character followed by a closing parenthesis. |
| **ANM\_HindiAlpha1Period** | 0x0028 | Hindi alphabetic character followed by a period. |

### TextBuildSubEffectEnum

*Referenced by:* [*AnimationInfoAtom*](#Section_4361cc1fcd514e61a451d252bf8e1069)

An enumeration that specifies behavior types of text in animation effects.

| Name | Value | Meaning |
| --- | --- | --- |
| **TXB\_BuildByNone** | 0x00 | Text is animated all at once. |
| **TXB\_BuildByWord** | 0x01 | Text is animated word by word. |
| **TXB\_BuildByCharacter** | 0x02 | Text is animated character by character. |

### TextDirectionEnum

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

An enumeration that specifies the direction of a paragraph of text.

| Name | Value | Meaning |
| --- | --- | --- |
| **LeftToRight** | 0x0000 | Left to right text flow. |
| **RightToLeft** | 0x0001 | Right to left text flow. |

### TextFontAlignmentEnum

*Referenced by:* [*TextPFException*](#Section_c15a13b3db2c4b50a7e608045581a663)

An enumeration that specifies font alignment.

| Name | Value | Meaning |
| --- | --- | --- |
| **Tx\_ALIGNFONTRoman** | 0x0000 | Place characters on font baseline. |
| **Tx\_ALIGNFONTHanging** | 0x0001 | Characters hang from top of line height |
| **Tx\_ALIGNFONTCenter** | 0x0002 | Characters centered within line height. |
| **Tx\_ALIGNFONTUpholdFixed** | 0x0003 | Characters are anchored to the very bottom of a single line. This is different than Tx\_ALIGNFONTRoman because of letters such as "g", "q", and "y". |

### TextTabTypeEnum

*Referenced by:* [*TabStop*](#Section_2b8ecabd6a6f426c9eecc1623611a1e8)

An enumeration that specifies alignment types of tab stops.

| Name | Value | Meaning |
| --- | --- | --- |
| **Tx\_TABLeft** | 0x0000 | Left-aligned tab stop. |
| **Tx\_TABCenter** | 0x0001 | Center-aligned tab stop. |
| **Tx\_TABRight** | 0x0002 | Right-aligned tab stop. |
| **Tx\_TABDecimal** | 0x0003 | Decimal point-aligned tab stop. |

### TextTypeEnum

*Referenced by:* [*OutlineTextPropsHeaderExAtom*](#Section_e75ff2cccd874d2e843a3fcaa4440b96)*,* [*TextHeaderAtom*](#Section_08d31a6607504009b41649f2871cd178)

An enumeration that specifies the types of text.

| Name | Value | Meaning |
| --- | --- | --- |
| **Tx\_TYPE\_TITLE** | 0x00000000 | Title [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) text. |
| **Tx\_TYPE\_BODY** | 0x00000001 | Body placeholder shape text. |
| **Tx\_TYPE\_NOTES** | 0x00000002 | Notes placeholder shape text. |
| **Tx\_TYPE\_OTHER** | 0x00000004 | Any other text. |
| **Tx\_TYPE\_CENTERBODY** | 0x00000005 | Center body placeholder shape text. |
| **Tx\_TYPE\_CENTERTITLE** | 0x00000006 | Center title placeholder shape text. |
| **Tx\_TYPE\_HALFBODY** | 0x00000007 | Half-sized body placeholder shape text. |
| **Tx\_TYPE\_QUARTERBODY** | 0x00000008 | Quarter-sized body placeholder shape text. |

### TimeAnimateBehaviorValueTypeEnum

*Referenced by:* [*TimeAnimateBehaviorAtom*](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe)*,* [*TimeSetBehaviorAtom*](#Section_f8876381cf7f4d2b9888965e2929c9dc)

An enumeration that specifies the data type of a property to be animated.

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TABVT\_String** | 0x00000000 | Animate text content. |
| **TL\_TABVT\_Number** | 0x00000001 | Animate a numeric property. |
| **TL\_TABVT\_Color** | 0x00000002 | Animate a color property. |

### TimeCommandBehaviorTypeEnum

*Referenced by:* [*TimeCommandBehaviorAtom*](#Section_19b49fc55a7f4022ba930df4d5269bb3)

An enumeration that specifies the type of a command.

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TCBT\_Event** | 0x00000000 | Send out an event to the target object. |
| **TL\_TCBT\_Call** | 0x00000001 | Call a method or function on the target object. |
| **TL\_TCBT\_OleVerb** | 0x00000002 | Send an OLE verb to the target object. |

### TimeNodeTypeEnum

*Referenced by:* [*TimeNodeAtom*](#Section_a6b40fd7decd4d6e991a10394458c6a8)

An enumeration that specifies the type of a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TNT\_Parallel** | 0x00000000 | Parallel time node whose child nodes can start simultaneously. |
| **TL\_TNT\_Sequential** | 0x00000001 | Sequential time node whose child nodes can only start sequentially and each child can only start after its previous sibling has started. |
| **TL\_TNT\_Behavior** | 0x00000003 | Behavior time node that contains a behavior. |
| **TL\_TNT\_Media** | 0x00000004 | Media time node that contains a media object. |

### TimePropertyID4TimeBehavior

*Referenced by:* [*TimeVariant4Behavior*](#Section_758f23158ef74f1d81da41ed4ab6683a)

An enumeration that specifies the type of attributes for an animation behavior.

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TBPID\_UnknownPropertyList** | 0x00000001 | Unknown property list. |
| **TL\_TBPID\_RuntimeContext** | 0x00000002 | Runtime context that specifies which versions of the application can run the behavior. |
| **TL\_TBPID\_MotionPathEditRelative** | 0x00000003 | Whether a motion path moves with the object that it applies to during editing. |
| **TL\_TBPID\_ColorColorModel** | 0x00000004 | Color model of a color animation. |
| **TL\_TBPID\_ColorDirection** | 0x00000005 | Color direction of a color animation. |
| **TL\_TBPID\_Override** | 0x00000006 | How to override animated values. |
| **TL\_TBPID\_PathEditRotationAngle** | 0x00000007 | Rotation angle of a motion path. |
| **TL\_TBPID\_PathEditRotationX** | 0x00000008 | Horizontal position of the rotation center of the motion path. |
| **TL\_TBPID\_PathEditRotationY** | 0x00000009 | Vertical position of the rotation center of the motion path. |
| **TL\_TBPID\_PointsTypes** | 0x0000000A | The type of points in the motion path. |

### TimePropertyID4TimeNode

*Referenced by:* [*TimeVariant4TimeNode*](#Section_1cbe764818fe4205b2c738163c85daf7)

An enumeration that specifies the type of attributes for a [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f).

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TPID\_Display** | 0x00000002 | Display type in UI. |
| **TL\_TPID\_MasterPos** | 0x00000005 | Relationship to the master time node. |
| **TL\_TPID\_SubType** | 0x00000006 | Type of the subordinate time node. |
| **TL\_TPID\_EffectID** | 0x00000009 | Identifier of an animation effect. |
| **TL\_TPID\_EffectDir** | 0x0000000A | Direction of an animation effect. |
| **TL\_TPID\_EffectType** | 0x0000000B | Type of an animation effect. |
| **TL\_TPID\_AfterEffect** | 0x0000000D | Whether the time node is an after effect. |
| **TL\_TPID\_SlideCount** | 0x0000000F | The number of slides that a media will play across. |
| **TL\_TPID\_TimeFilter** | 0x00000010 | Time filtering for the time node. |
| **TL\_TPID\_EventFilter** | 0x00000011 | Event filtering for the time node. |
| **TL\_TPID\_HideWhenStopped** | 0x00000012 | Whether to display the media when it is stopped. |
| **TL\_TPID\_GroupID** | 0x00000013 | [**Build identifier**](#gt_0748643f-8a66-42ea-959a-3acd533eedc5). |
| **TL\_TPID\_EffectNodeType** | 0x00000014 | The role of the time node in the timing structure. |
| **TL\_TPID\_PlaceholderNode** | 0x00000015 | Whether the time node is a placeholder. |
| **TL\_TPID\_MediaVolume** | 0x00000016 | The volume of a media. |
| **TL\_TPID\_MediaMute** | 0x00000017 | Whether a media object is mute. |
| **TL\_TPID\_ZoomToFullScreen** | 0x0000001A | Whether to zoom a media object to full screen. |

### TimeVariantTypeEnum

*Referenced by:* [*TimeColorDirection*](#Section_0299e331262745c59fe0541de33dcaa8)*,* [*TimeColorModel*](#Section_3c4894dddd604fde8e92a0d9bcd730ff)*,* [*TimeDisplayType*](#Section_4ce3979934b1456a9a21dc5dda7c0d21)*,* [*TimeEffectID*](#Section_35c58b5655324d778c3353a82efb5a89)*,* [*TimeEffectNodeType*](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed)*,* [*TimeEffectType*](#Section_989fce31f9b845a8a358361ca53d7a3d)*,* [*TimeEventFilter*](#Section_a4433ce8d99e43a6999c1387161c610d)*,* [*TimeGroupID*](#Section_da6bcd4790ea44a692a0aeca9c2864e4)*,* [*TimeMasterRelType*](#Section_a55a946ac8df4659a2934fe3370e4706)*,* [*TimeNodeTimeFilter*](#Section_41a5d8b9c0014fecaf559903e8a7a482)*,* [*TimeOverride*](#Section_20ce9a318eaa4a42b957b9111be76b2c)*,* [*TimePointsTypes*](#Section_1656e976a2c14a19a9e9dccd516f24af)*,* [*TimeRuntimeContext*](#Section_4c48cb5aae834962a0ac994008e08193)*,* [*TimeSubType*](#Section_ac877ddb3911491f8026d11051aa0b63)*,* [*TimeVariantBool*](#Section_c8267defadc64a0c9f6dc9d2498ab9d5)*,* [*TimeVariantFloat*](#Section_8b7a8b5faf3841f182e2690112fd633c)*,* [*TimeVariantInt*](#Section_d9647022f6834f1a9267cc8519053318)*,* [*TimeVariantString*](#Section_c53f2602385449249a6349400ec6255c)

An enumeration that specifies the data type of a value.

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TVT\_Bool** | 0x00 | A [**Boolean**](#gt_1d79d7a7-ba2c-4b34-931c-7ba8057c87b2) value. |
| **TL\_TVT\_Int** | 0x01 | A **signed integer**. |
| **TL\_TVT\_Float** | 0x02 | A [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d). |
| **TL\_TVT\_String** | 0x03 | A [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) string. |

### TimeVisualElementEnum

*Referenced by:* [*VisualPageAtom*](#Section_4ecd8e2993c14393a31c80a8ccd529ce)*,* [*VisualShapeChartElementAtom*](#Section_660780f345414850bae696b8ffa7d645)*,* [*VisualShapeGeneralAtom*](#Section_e3f4be5088fd43fdb68f82f2743e92ea)*,* [*VisualSoundAtom*](#Section_8cf2f3366e294368b5f1a21e8779f3af)

An enumeration that specifies the part of a [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc) or [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) to which the animation is applied.

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TVET\_Shape** | 0x00000000 | Applies to the shape and all its text. |
| **TL\_TVET\_Page** | 0x00000001 | Applies to the slide. |
| **TL\_TVET\_TextRange** | 0x00000002 | Applies to a specified range of text of the shape. |
| **TL\_TVET\_Audio** | 0x00000003 | Applies to the audio of the shape. |
| **TL\_TVET\_Video** | 0x00000004 | Applies to the video of the shape. |
| **TL\_TVET\_ChartElement** | 0x00000005 | Applies to the elements of the chart. |
| **TL\_TVET\_ShapeOnly** | 0x00000006 | Applies to the shape but not its text. |
| **TL\_TVET\_AllTextRange** | 0x00000008 | Applies to all text of the shape. |

### TriggerObjectEnum

*Referenced by:* [*TimeConditionAtom*](#Section_6d79388473f24b87b8b1a1b0e6310ad6)

An enumeration that specifies the type of a target that participates in the evaluation of a [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704).

| Name | Value | Meaning |
| --- | --- | --- |
| **TL\_TOT\_None** | 0x00000000 | None. |
| **TL\_TOT\_VisualElement** | 0x00000001 | An animatable object. |
| **TL\_TOT\_TimeNode** | 0x00000002 | A [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f). |
| **TL\_TOT\_RuntimeNodeRef** | 0x00000003 | Runtime child time nodes. |

### ViewTypeEnum

*Referenced by:* [*UserEditAtom*](#Section_3ffb3fab95de487398aad508fbbac981)

An enumeration that specifies different viewing modes in which a [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) can be displayed in a user interface.

| Name | Value | Meaning |
| --- | --- | --- |
| **V\_Slide** | 0x0001 | A view optimized for the display of a [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192). |
| **V\_SlideMaster** | 0x0002 | A view optimized for the display of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). |
| **V\_Notes** | 0x0003 | A view optimized for the display of a [**notes slide**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65). |
| **V\_Handout** | 0x0004 | A view optimized for the display of the [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577). |
| **V\_NotesMaster** | 0x0005 | A view optimized for the display of the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a). |
| **V\_OutlineMaster** | 0x0006 | A view optimized for the display of the outline master slide. |
| **V\_Outline** | 0x0007 | A view optimized for the display of the text on the presentation slides. |
| **V\_SlideSorter** | 0x0008 | A view optimized for the simultaneous display of multiple presentation slides. |
| **V\_VisualBasic** | 0x0009 | A view optimized for the display of the VBA information. |
| **V\_TitleMaster** | 0x000A | A view optimized for the display of a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). |
| **V\_SlideShow** | 0x000B | A view optimized for the display of a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). |
| **V\_SlideShowFullScreen** | 0x000C | A view optimized for the display of a slide show in full screen. |
| **V\_NotesText** | 0x000D | A view optimized for the display of the text of a notes slide. |
| **V\_PrintPreview** | 0x000E | A view optimized for the display of a print preview of the presentation slides. |
| **V\_Thumbnails** | 0x000F | A view optimized for the simultaneous display of multiple presentation slides in a single column. |
| **V\_MasterThumbnails** | 0x0010 | A view optimized for the simultaneous display of multiple main master slides or title master slides in a single column. |
| **V\_PodiumSlideView** | 0x0011 | A view optimized for the display of presentation slides while a slide show is also being displayed. |
| **V\_PodiumNotesView** | 0x0012 | A view optimized for the display of the text of a notes slide while a slide show is also being displayed. |

### WebFrameColorsEnum

*Referenced by:* [*HTMLDocInfo9Atom*](#Section_9f9b9371093248ffa775cac417c466ef)

An enumeration that specifies the color options for displaying the text and background for the Web page notes pane and outline pane.

| Name | Value | Meaning |
| --- | --- | --- |
| **MSOWOPTBrowserColors** | 0x0000 | Browser colors. |
| **MSOWOPTPresentationSchemeTextColor** | 0x0001 | Presentation text colors. |
| **MSOWOPTPresentationSchemeAccentColor** | 0x0002 | Presentation accent colors. |
| **MSOWOPTWhiteTextOnBlack** | 0x0003 | White text on black background. |
| **MSOWOPTBlackTextOnWhite** | 0x0004 | Black text on white background. |

### WebOutputEnum

*Referenced by:* [*HTMLDocInfo9Atom*](#Section_9f9b9371093248ffa775cac417c466ef)*,* [*HTMLPublishInfoAtom*](#Section_4296eeb2c07643a29a23bf645a2054c6)

An enumeration that specifies the target Web technology support for which a publishing is optimized.

| Name | Value | Meaning |
| --- | --- | --- |
| **HTML\_EXPORTVersion3** | 0x01 | Web page is optimized for use with HTML, CSS, Javascript and frames. |
| **HTML\_EXPORTVersion4** | 0x02 | Web page is optimized for use with HTML, MHTML, DHTML, CSS, JScript, frames, VML, and PNG graphics. |
| **HTML\_EXPORTDual** | 0x04 | Web page contains optimized output for both technology formats and conditional statements to determine proper usage. |

# Structure Examples

## Introduction

The following sections provide structure examples of different features of this file format. These examples are illustrative of the preceding specification and do not cover all possible structure usage scenarios. They are not intended to replace the preceding specification but rather to clarify and enhance it. All examples are derived from the same presentation, sample.ppt, which is represented visually in the following figures.

1 a sample presentation
2 the weather
a sunny day
the blue sky
some green grass
3 a green square
4 a hungry bear
5 a fruit pie chart
6 shapes with text

Figure 4: Outline text



Figure 5: Presentation slide 1

The weather
a sunny day
the blue sky
some green grass

Figure 6: Presentation slide 2

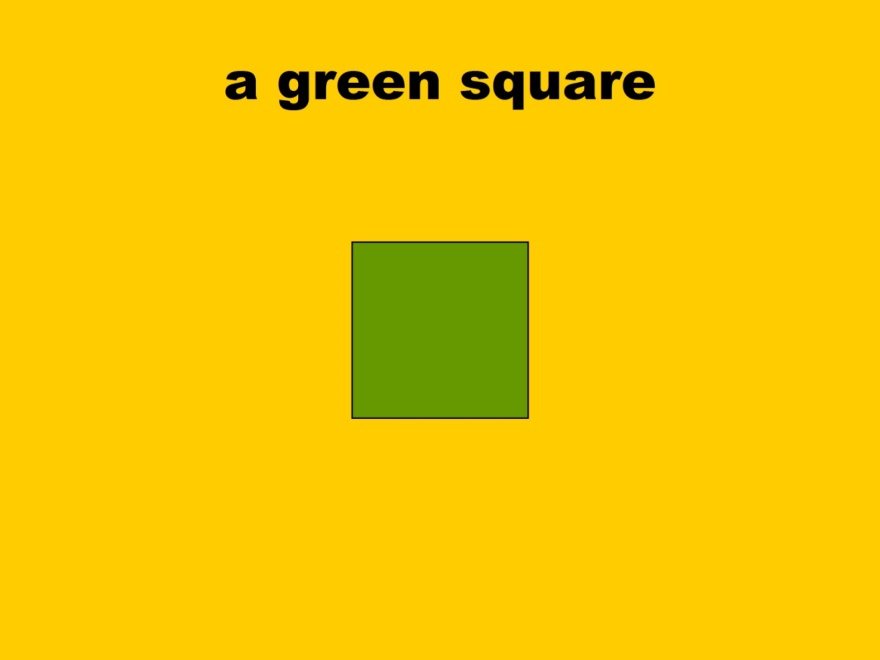


Figure 7: Presentation slide 3



Figure 8: Presentation slide 4

A fruit pie chart
bananas
limes
blueberries
apples

Figure 9: Presentation slide 5

Shapes with text
a bold triangle
a hyperlinked square
an underlined circle
text formatting

Figure 10: Presentation slide 6

a sample presentation
Notes: a sample presentation for MS-PPT8 created on April 15th, 2008

Figure 11: Notes slide 1

The weather
a sunny day
the blue sky
some green grass

Notes: day in and day out a story of the weather outside the window

Figure 12: Notes slide 2

A green square
Notes: the green square sitting on a bright yellow background. has too much contrast?

Figure 13: Notes slide 3

A hungry bear
Notes: the bear is hungry
the bear is wet
the bear is cold
the birds are full and dry

A hungry brown bear
fishing in the flowing stream
birds stand vigilant

Figure 14: Notes slide 4

A fruit pie chart
Notes: in all, how much fruit
can someone possibly eat
a whole pie, I guess

Figure 15: Notes slide 5

Shapes with text
Notes: geometric shapes
are filled brightly with colors
with text for effect

Figure 16: Notes slide 6

Click to edit Master title style
Click to edit master text styles
-Second level
Third level
Fourth level
Fifth level

Figure 17: Main master slide

Click to edit Master title style
Click to edit Master subtitle style

Figure 18: Title master slide

Click to edit Master title style
Click to edit Master text styles
Second level
Third level
Fourth level
Fifth level
Notes: Click to edit Master text styles
Second level
Third level
Fourth level
Fifth level

Figure 19: Notes master slide

The sample presentation was authored in two sessions. The first session created a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d), a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e), six [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192), and associated [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) for five of the six presentation slides. The second session deleted the presentation slide without an associated notes slide, changed the content on presentation slide 3, and added presentation slide 6 and an associated notes slide.

The preceding figures will be further explained in the sections that follow.

## File Structure

This section provides an example of how to construct the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1) for the file. Correctly constructing the persist object directory is the first step in finding the rest of the [**presentation**](#gt_a74c2f64-c512-41bc-9662-8168b2b0f5ae) content in the file—[**main master slides**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d), [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a), [**handout master slide**](#gt_178f5980-ad76-4ba4-85b6-b4c9dbeaf577), [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192), [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65), embedded or linked [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) storages, and the [**VBA project**](#gt_980e3334-2874-4425-a73a-f2235cec1e1e) storage. Because new [**user edits**](#gt_7d9321a6-b9a8-4481-87be-58d6389acc0e) can simply be appended to the existing stream contents, the process for constructing the persist object directory needs to be carefully followed to ensure that the most recent version of a [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68) is used and older versions are ignored.

Construction of the persist object directory begins with parsing the **CurrentUserAtom** record (section [2.3.2](#Section_940d5700e4d74fc0ab48fed5dbc48bc1)). The child-record hierarchy of the **CurrentUserAtom** record is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00000000 | 005F | CurrentUserAtom **- currentUserAtom** |  |
| 00000000 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00000008 | 0004 | unsigned integer **- size** | 0x00000014 |
| 0000000C | 0004 | unsigned integer **- headerToken** | 0xE391C05F |
| 00000010 | 0004 | unsigned integer **- offsetToCurrentEdit** | 0x00008290 |
| 00000014 | 0002 | unsigned integer **- lenUserName** | 0x0015 |
| 00000016 | 0002 | unsigned integer **- docFileVersion** | 0x03F4 |
| 00000018 | 0001 | unsigned integer **- majorVersion** | 0x03 |
| 00000019 | 0001 | unsigned integer **- minorVersion** | 0x00 |
| 0000001A | 0002 | unsigned integer **- unused** | 0x0000 |
| 0000001C | 0015 | array of bytes **- ansiUserName** | Microsoft Corporation |
| 00000031 | 0004 | unsigned integer **- relVersion** | 0x00000008 |
| 00000035 | 002A | array of bytes **- unicodeUserName** | Microsoft Corporation |

Figure 20: CurrentUserAtom child-record hierarchy

**offsetToCurrentEdit:** 0x00008290 specifies the offset, in bytes, from the beginning of the **PowerPoint Document Stream** (section [2.1.2](#Section_1fc22d5628f94818bd4567c2bf721ccf)) to the **UserEditAtom** record (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)) for the most recent user edit.

The **UserEditAtom** record specified by the **offsetToCurrentEdit** field in the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00008290 | 0024 | UserEditAtom |  |
| 00008290 | 0008 | RecordHeader **- rh** |  |
| 00008298 | 0004 | unsigned integer **- lastSlideIdRef** | 0x00000100 |
| 0000829C | 16 bits | unsigned integer **- version** | 0x1FE9 |
| 0000829C | 8 bits | unsigned integer **- minorVersion** | 0x00 |
| 0000829C | 8 bits | unsigned integer **- majorVersion** | 0x03 |
| 000082A0 | 0004 | unsigned integer **- offsetLastEdit** | 0x00005C45 |
| 000082A4 | 0004 | unsigned integer **- offsetPersistDirectory** | 0x0000826C |
| 000082A8 | 0004 | unsigned integer **- docPersistIdRef** | 0x00000001 |
| 000082AC | 0004 | unsigned integer **- persistIdSeed** | 0x00000014 |
| 000082B0 | 0002 | [ViewTypeEnum](#Section_cba11b78dfcd451e81cdbf080175e314) **- lastView** | 0x0001 |
| 000082B2 | 0002 | unsigned integer **- unused** | 0x31C5 |

Figure 21: UserEditAtom child-record hierarchy for the most recent user edit

**offsetLastEdit:** 0x00005C45 specifies the offset, in bytes, from the beginning of the **PowerPoint Document Stream** to the **UserEditAtom** record for the previous user edit.

**offsetPersistDirectory:** 0x0000826C specifies the offset, in bytes, from the beginning of the **PowerPoint Document Stream** to the **PersistDirectoryAtom** record (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)) for the most recent user edit.

The **PersistDirectoryAtom** record specified by the **offsetPersistDirectory** field in the previous table titled "UserEditAtom child-record hierarchy for the most recent user edit" is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000826C | 0024 | PersistDirectoryAtom |  |
| 0000826C | 0008 | RecordHeader **- rh** |  |
| 00008274 | 0008 | [PersistDirectoryEntry](#Section_6214b5a67ca24a868a0e5fd3d3eff1c9) **- persistDirEntry[0]** |  |
| 00008274 | 20 bits | unsigned integer **- persistId** | 0x00001 |
| 00008274 | 12 bits | unsigned integer **- cPersist** | 0x001 |
| 00008278 | 0004 | [PersistOffsetEntry](#Section_a056484a21324e1eaa546e387f9695cf) **- persistOffset[0]** | 0x00005C69 |
| 0000827C | 0008 | PersistDirectoryEntry **- persistDirEntry[1]** |  |
| 0000827C | 20 bits | unsigned integer **- persistId** | 0x00006 |
| 0000827C | 12 bits | unsigned integer **- cPersist** | 0x001 |
| 00008280 | 0004 | PersistOffsetEntry **- persistOffset[0]** | 0x00006964 |
| 00008284 | 000C | PersistDirectoryEntry **- persistDirEntry[2]** |  |
| 00008284 | 20 bits | unsigned integer **- persistId** | 0x00013 |
| 00008284 | 12 bits | unsigned integer **- cPersist** | 0x002 |
| 00008288 | 0004 | PersistOffsetEntry **- persistOffset[0]** | 0x00007AF6 |
| 0000828C | 0004 | PersistOffsetEntry **- persistOffset[1]** | 0x00007FE3 |

Figure 22: PersistDirectoryAtom child-record hierarchy for the most recent user edit

**persistDirEntry[0].persistId:** 0x00001 specifies the starting [**persist object identifier**](#gt_f59810ad-9495-4236-817d-420613003d53) for the **PersistOffsetEntry** entries (section 2.3.6) that follow.

**persistDirEntry[0].cPersist:** 0x001 specifies the count of **PersistOffsetEntry** entries that follow.

**persistDirEntry[0].persistOffset[0]:** 0x00005C69 specifies the stream offset for the persist object with persist object identifier 0x00001.

**persistDirEntry[1].persistId:** 0x00006 specifies the starting persist object identifier for the **PersistOffsetEntry** entries that follow.

**persistDirEntry[1].cPersist:** 0x001 specifies the count of **PersistOffsetEntry** entries that follow.

**persistDirEntry[1].persistOffset[0]:** 0x00006964 specifies the stream offset for the persist object with persist object identifier 0x00006.

**persistDirEntry[2].persistId:** 0x00013 specifies the starting persist object identifier for the **PersistOffsetEntry** entries that follow.

**persistDirEntry[2].cPersist:** 0x002 specifies the count of **PersistOffsetEntry** entries that follow.

**persistDirEntry[2].persistOffset[0]:** 0x00007AF6 specifies the stream offset for the persist object with persist object identifier 0x00013.

**persistDirEntry[2].persistOffset[1]:** 0x00007FE3 specifies the stream offset for the persist object with persist object identifier 0x00014.

The partial persist object directory constructed after parsing the first **PersistDirectoryAtom** record is summarized in the following table.

| Persist object identifier | Persist object stream offset |
| --- | --- |
| 0x00001 | 0x00005C69 |
| 0x00006 | 0x00006964 |
| 0x00013 | 0x00007AF6 |
| 0x00014 | 0x00007FE3 |

The **UserEditAtom** record specified by the **offsetLastEdit** field in the previous table titled "UserEditAtom child-record hierarchy for the most recent user edit" is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005C45 | 0024 | UserEditAtom |  |
| 00005C45 | 0008 | RecordHeader **- rh** |  |
| 00005C4D | 0004 | unsigned integer **- lastSlideIdRef** | 0x00000104 |
| 00005C51 | 16 bits | unsigned integer **- version** | 0x1FE9 |
| 00005C51 | 8 bits | unsigned integer **- minorVersion** | 0x00 |
| 00005C51 | 8 bits | unsigned integer **- majorVersion** | 0x03 |
| 00005C55 | 0004 | unsigned integer **- offsetLastEdit** | 0x00000000 |
| 00005C59 | 0004 | unsigned integer **- offsetPersistDirectory** | 0x00005BF1 |
| 00005C5D | 0004 | unsigned integer **- docPersistIdRef** | 0x00000001 |
| 00005C61 | 0004 | unsigned integer **- persistIdSeed** | 0x00000012 |
| 00005C65 | 0002 | ViewTypeEnum **- lastView** | 0x000F |
| 00005C67 | 0002 | unsigned integer **- unused** | 0x31C5 |

Figure 23: UserEditAtom child-record hierarchy for the previous user edit

**offsetLastEdit:** 0x00000000 specifies that no further user edits exist.

**offsetPersistDirectory:** 0x00005BF1 specifies the offset, in bytes, from the beginning of the **PowerPoint Document Stream** to the **PersistDirectoryAtom** record for this previous user edit.

The **PersistDirectoryAtom** record specified by the **offsetPersistDirectory** field in the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005BF1 | 0054 | PersistDirectoryAtom |  |
| 00005BF1 | 0008 | RecordHeader **- rh** |  |
| 00005BF9 | 0028 | PersistDirectoryEntry **- persistDirEntry[0]** |  |
| 00005BF9 | 20 bits | unsigned integer **- persistId** | 0x00001 |
| 00005BF9 | 12 bits | unsigned integer **- cPersist** | 0x009 |
| 00005BFD | 0004 | PersistOffsetEntry **- persistOffset[0]** | 0x00000000 |
| 00005C01 | 0004 | PersistOffsetEntry **- persistOffset[1]** | 0x00000CC5 |
| 00005C05 | 0004 | PersistOffsetEntry **- persistOffset[2]** | 0x00001671 |
| 00005C09 | 0004 | PersistOffsetEntry **- persistOffset[3]** | 0x000021C8 |
| 00005C0D | 0004 | PersistOffsetEntry **- persistOffset[4]** | 0x000023F4 |
| 00005C11 | 0004 | PersistOffsetEntry **- persistOffset[5]** | 0x000030CD |
| 00005C15 | 0004 | PersistOffsetEntry **- persistOffset[6]** | 0x00004D69 |
| 00005C19 | 0004 | PersistOffsetEntry **- persistOffset[7]** | 0x000037B5 |
| 00005C1D | 0004 | PersistOffsetEntry **- persistOffset[8]** | 0x00003E83 |
| 00005C21 | 0008 | PersistDirectoryEntry **- persistDirEntry[1]** |  |
| 00005C21 | 20 bits | unsigned integer **- persistId** | 0x0000B |
| 00005C21 | 12 bits | unsigned integer **- cPersist** | 0x001 |
| 00005C25 | 0004 | PersistOffsetEntry **- persistOffset[0]** | 0x00001B98 |
| 00005C29 | 001C | PersistDirectoryEntry **- persistDirEntry[2]** |  |
| 00005C29 | 20 bits | unsigned integer **- persistId** | 0x0000D |
| 00005C29 | 12 bits | unsigned integer **- cPersist** | 0x006 |
| 00005C2D | 0004 | PersistOffsetEntry **- persistOffset[0]** | 0x000040CB |
| 00005C31 | 0004 | PersistOffsetEntry **- persistOffset[1]** | 0x00004319 |
| 00005C35 | 0004 | PersistOffsetEntry **- persistOffset[2]** | 0x000045D4 |
| 00005C39 | 0004 | PersistOffsetEntry **- persistOffset[3]** | 0x00004873 |
| 00005C3D | 0004 | PersistOffsetEntry **- persistOffset[4]** | 0x00004B22 |
| 00005C41 | 0004 | PersistOffsetEntry **- persistOffset[5]** | 0x00002E81 |

Figure 24: PersistDirectoryAtom child-record hierarchy for the previous user edit

**persistDirEntry[0].persistId:** 0x00001 specifies the starting persist object identifier for the **PersistOffsetEntry** entries that follow.

**persistDirEntry[0].cPersist:** 0x009 specifies the count of **PersistOffsetEntry** entries that follow.

**persistDirEntry[0].persistOffset[0]:** 0x00000000 specifies the stream offset for the persist object with persist object identifier 0x00001. However, because the persist object identifier 0x00001 already appears in the first table in this section, this stream offset is ignored.

**persistDirEntry[0].persistOffset[1]:** 0x00000CC5 specifies the stream offset for the persist object with persist object identifier 0x00002.

**persistDirEntry[0].persistOffset[2]:** 0x00001671 specifies the stream offset for the persist object with persist object identifier 0x00003.

**persistDirEntry[0].persistOffset[3]:** 0x000021C8 specifies the stream offset for the persist object with persist object identifier 0x00004.

**persistDirEntry[0].persistOffset[4]:** 0x000023F4 specifies the stream offset for the persist object with persist object identifier 0x00005.

**persistDirEntry[0].persistOffset[5]:** 0x000030CD specifies the stream offset for the persist object with persist object identifier 0x00006. However, because the persist object identifier 0x00006 already appears in the first table in this section, this stream offset is ignored.

**persistDirEntry[0].persistOffset[6]:** 0x00004D69 specifies the stream offset for the persist object with persist object identifier 0x00007.

**persistDirEntry[0].persistOffset[7]:** 0x000037B5 specifies the stream offset for the persist object with persist object identifier 0x00008.

**persistDirEntry[0].persistOffset[8]:** 0x00003E83 specifies the stream offset for the persist object with persist object identifier 0x00009.

**persistDirEntry[1].persistId:** 0x0000B specifies the starting persist object identifier for the **PersistOffsetEntry** entries that follow.

**persistDirEntry[1].cPersist:** 0x001 specifies the count of **PersistOffsetEntry** entries that follow.

**persistDirEntry[1].persistOffset[0]:** 0x00001B98 specifies the stream offset for the persist object with persist object identifier 0x0000B.

**persistDirEntry[2].persistId:** 0x0000D specifies the starting persist object identifier for the **PersistOffsetEntry** entries that follow.

**persistDirEntry[2].cPersist:** 0x006 specifies the count of **PersistOffsetEntry** entries that follow.

**persistDirEntry[2].persistOffset[0]:** 0x000040CB specifies the stream offset for the persist object with persist object identifier 0x0000D.

**persistDirEntry[2].persistOffset[1]:** 0x00004319 specifies the stream offset for the persist object with persist object identifier 0x0000E.

**persistDirEntry[2].persistOffset[2]:** 0x000045D4 specifies the stream offset for the persist object with persist object identifier 0x0000F.

**persistDirEntry[2].persistOffset[3]:** 0x00004873 specifies the stream offset for the persist object with persist object identifier 0x00010.

**persistDirEntry[2].persistOffset[4]:** 0x00004B22 specifies the stream offset for the persist object with persist object identifier 0x00011.

**persistDirEntry[2].persistOffset[5]:** 0x00002E81 specifies the stream offset for the persist object with persist object identifier 0x00012.

The complete persist object directory constructed after parsing all **PersistDirectoryAtom** records is summarized in the following table.

| Persist object identifier | Persist object stream offset |
| --- | --- |
| 0x00001 | 0x00005C69 |
| 0x00002 | 0x00000CC5 |
| 0x00003 | 0x00001671 |
| 0x00004 | 0x000021C8 |
| 0x00005 | 0x000023F4 |
| 0x00006 | 0x00006964 |
| 0x00007 | 0x00004D69 |
| 0x00008 | 0x000037B5 |
| 0x00009 | 0x00003E83 |
| 0x0000B | 0x00001B98 |
| 0x0000D | 0x000040CB |
| 0x0000E | 0x00004319 |
| 0x0000F | 0x000045D4 |
| 0x00010 | 0x00004873 |
| 0x00011 | 0x00004B22 |
| 0x00012 | 0x00002E81 |
| 0x00013 | 0x00007AF6 |
| 0x00014 | 0x00007FE3 |

## Persist Objects

The **PowerPoint Document Stream** (section [2.1.2](#Section_1fc22d5628f94818bd4567c2bf721ccf)) is fundamentally a sequence of [**container records**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d) and [**atom records**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) that represent [**persist objects**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68), the **PersistDirectoryAtom** records (section [2.3.4](#Section_d10a093d860f409cb065aeb24b830505)) that comprise the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1), and the **UserEditAtom** records (section [2.3.3](#Section_3ffb3fab95de487398aad508fbbac981)) that identify the content comprising each [**user edit**](#gt_7d9321a6-b9a8-4481-87be-58d6389acc0e). The specific top-level record sequence for the sample presentation is shown in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00000000 | 82B4 | Stream **- PowerPoint Document** |
| 00000000 | 0CC5 | **A**: [DocumentContainer](#Section_6254c4d152174e16b20dc04ddcce31c9) |
| 00000CC5 | 09AC | **B**: [MainMasterContainer](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8) |
| 00001671 | 0527 | **C**: [SlideContainer](#Section_4cac097673d04ab3a70be98b3cf1c312) |
| 00001B98 | 0630 | **D**: [NotesContainer](#Section_50bfc0f7c1014c3287546ca59772b785) |
| 000021C8 | 022C | **E**: SlideContainer |
| 000023F4 | 0A8D | **F**: SlideContainer |
| 00002E81 | 024C | **G**: SlideContainer |
| 000030CD | 06E8 | **H**: SlideContainer |
| 000037B5 | 06CE | **I**: SlideContainer |
| 00003E83 | 0248 | **J**: SlideContainer |
| 000040CB | 024E | **K**: NotesContainer |
| 00004319 | 02BB | **L**: NotesContainer |
| 000045D4 | 029F | **M**: NotesContainer |
| 00004873 | 02AF | **N**: NotesContainer |
| 00004B22 | 0247 | **O**: NotesContainer |
| 00004D69 | 0E88 | **P**: [ExOleObjStg](#Section_21e29c16df3a435280172c48864d2548) |
| 00005BF1 | 0054 | **Q**: PersistDirectoryAtom |
| 00005C45 | 0024 | **R**: UserEditAtom |
| 00005C69 | 0CFB | **S**: DocumentContainer |
| 00006964 | 1192 | **T**: SlideContainer |
| 00007AF6 | 04ED | **U**: SlideContainer |
| 00007FE3 | 0289 | **V**: NotesContainer |
| 0000826C | 0024 | **W**: PersistDirectoryAtom |
| 00008290 | 0024 | **X**: UserEditAtom |

Figure 25: Top-level record sequence in the PowerPoint Document Stream from sample.ppt

For each record in the previous table, the type of the record and its offset from the beginning of the **PowerPoint Document Stream** are listed. The atom records are: **ExOleObjStg** (section 2.10.34), **PersistDirectoryAtom** and **UserEditAtom**. The rest are container records. The letter labels are used to identify specific records in the text that follows.

The first user edit comprises records labeled A through R and the second user edit comprises records labeled S through X. By cross-referencing the previous table with the output from the second table in section [3.2](#Section_5bda800966124679a6eb6fb83cbcf195), some dead records can be immediately identified, because their offsets do not appear in the second table in section 3.2. Specifically, **DocumentContainer** (section 2.4.1) record A is a dead record and is superseded by record S; **SlideContainer** (section 2.5.1) record H is also a dead record and is superseded by record T. Although **SlideContainer** record G is referenced by the persist object directory shown in the second table in section 3.2, further parsing of the **slideList** field of the **DocumentContainer** record S determines that no **SlidePersistAtom** (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) child-record has a **persistIdRef** field equal to 0x00000012. For more information about how the records from the previous table are associated with the slide images as shown in figures titled "Presentation slide 1" through "Notes master slide" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6), see the Slides Example (section [3.5](#Section_abdcb7cd4cc142fea805ed89403b4fae)).

## Outline Text

The outline text can be displayed visually, as shown in the figure titled "Outline text" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6). The records used to construct the outline text are found inside the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)) contained within the **DocumentContainer** record (section [2.4.1](#Section_6254c4d152174e16b20dc04ddcce31c9)). The child-record hierarchy of the **DocumentContainer** record S from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section [3.3](#Section_7bd57959d49c48a1940abde37ec93c6f) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00005C69 | 0CFB | DocumentContainer |
| 00005C69 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 00005C71 | 0030 | **E**: [DocumentAtom](#Section_121f272834974a0a829e6f416fee2ee6) **- documentAtom** |
| 00005CA1 | 0152 | **F**: [ExObjListContainer](#Section_3b997d4d79514478acc51c9adbc2627a) **- exObjList** |
| 00005DF3 | 016A | [DocumentTextInfoContainer](#Section_6a08728e04f84cc1831773cefa178870) **- documentTextInfo** |
| 00005F5D | 01FC | [DrawingGroupContainer](#Section_1daf91b135314e55ba6a2e271de975c0) **- drawingGroup** |
| 00006159 | 0040 | **A**: [MasterListWithTextContainer](#Section_18a9bc043307440ebbc2efcb75ee923d) **- masterList** |
| 00006199 | 04D7 | **D**: [DocInfoListContainer](#Section_f0fed863362f43a0ae7872ae15e56171) **- docInfoList** |
| 00006670 | 0014 | [SlideHeadersFootersContainer](#Section_c1ff52ebb70a4de3a03385eefc7a25a8) **- slideHF** |
| 00006684 | 0014 | [NotesHeadersFootersContainer](#Section_58fe42d1259e4f809a342567c565125e) **- notesHF** |
| 00006698 | 0214 | **B**: SlideListWithTextContainer **- slideList** |
| 000068AC | 00B0 | **C**: [NotesListWithTextContainer](#Section_55453e3706744703bd8dfcaba335f840) **- notesList** |
| 0000695C | 0008 | [EndDocumentAtom](#Section_ac2a2b3b4ccc4f3ab17252dd742b5475) **- endDocumentAtom** |

Figure 26: DocumentContainer child-record hierarchy

The child-record hierarchy of the **SlideListWithTextContainer** (section 2.4.14.3) record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00006698 | 0214 | SlideListWithTextContainer **- slideList** |
| 00006698 | 0008 | RecordHeader **- rh** |
| 000066A0 | 001C | [SlidePersistAtom](#Section_48dce41296924f93aeb73d9fdd3a0a5a) **- case of RT\_SlidePersistAtom** |
| 000066BC | 000C | **A**: [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) **- case of RT\_TextHeaderAtom** |
| 000066C8 | 0010 | **B**: [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) **- case of RT\_TextBytesAtom** |
| 000066D8 | 000C | **C**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 000066E4 | 0014 | **D**: TextBytesAtom **- case of RT\_TextBytesAtom** |
| 000066F8 | 001C | SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 00006714 | 000C | **E**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006720 | 0013 | **F**: TextBytesAtom **- case of RT\_TextBytesAtom** |
| 00006733 | 000C | **G**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 0000673F | 0031 | **H**: TextBytesAtom **- case of RT\_TextBytesAtom** |
| 00006770 | 0022 | [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) **- case of RT\_StyleTextPropAtom** |
| 00006792 | 001C | SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 000067AE | 000C | **I**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 000067BA | 0016 | **J**: TextBytesAtom **- case of RT\_TextBytesAtom** |
| 000067D0 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 000067DC | 0012 | [TextSpecialInfoAtom](#Section_382afea69dc34b6c820611abef8b8366) **- case of RT\_TextSpecialInfoAtom** |
| 000067EE | 001C | SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 0000680A | 000C | **K**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006816 | 0015 | **L**: TextBytesAtom **- case of RT\_TextBytesAtom** |
| 0000682B | 001C | SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 00006847 | 000C | **M**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006853 | 0019 | **N**: TextBytesAtom **- case of RT\_TextBytesAtom** |
| 0000686C | 001C | SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 00006888 | 000C | **O**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006894 | 0018 | **P**: TextBytesAtom **- case of RT\_TextBytesAtom** |

Figure 27: SlideListWithTextContainer child-record hierarchy

The character content of the outline text is derived from the TextBytesAtom records labeled B, D, F, H, J, L, N, and P in the previous table titled "SlideListWithTextContainer child-record hierarchy". The TextHeaderAtom records labeled A, C, E, G, I, K, M, and O that precede the TextBytesAtom records indicate the type of text content as specified by the **textType** field and the [**TextTypeEnum**](#Section_50118cd348c243299a406a0281e960b6)**.** These values can be used to organize the text into logical outline levels, where title [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) text is a top-level outline item and body placeholder shape text is a subordinate outline item.

The detailed structures of records A through P in the previous table titled "SlideListWithTextContainer child-record hierarchy" are shown in the following tables. Non-printable character content in TextBytesAtom records has been replaced with "\t", "\n", "\v", or "\r" where applicable.

The first line of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records A and B, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066BC | 000C | **A**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 000066BC | 0008 | RecordHeader **- rh** |  |
| 000066BC | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000066BC | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000066BE | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0F9F |
| 000066C0 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 000066C4 | 0004 | TextTypeEnum **- textType** | 0x00000006 |

Figure 28: Outline TextHeaderAtom record A

**textType:** 0x00000006 specifies that the following character content in the **textBytes** field of the following table represents the center title placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066C8 | 0010 | **B**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 000066C8 | 0008 | RecordHeader **- rh** |  |
| 000066C8 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000066C8 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000066CA | 0002 | RecordType **- recType** | 0x0FA8 |
| 000066CC | 0004 | unsigned integer **- recLen** | 0x00000008 |
| 000066D0 | 0008 | array of bytes **- textBytes** | a sample |

Figure 29: Outline TextBytesAtom record B

**textBytes:** "a sample" specifies the center title placeholder shape text.

The second line of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records C and D, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066D8 | 000C | **C**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 000066D8 | 0008 | RecordHeader **- rh** |  |
| 000066D8 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000066D8 | 12 bits | unsigned integer **- recInstance** | 0x001 |
| 000066DA | 0002 | RecordType **- recType** | 0x0F9F |
| 000066DC | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 000066E0 | 0004 | TextTypeEnum **- textType** | 0x00000005 |

Figure 30: Outline TextHeaderAtom record C

**textType:** 0x00000005 specifies that the following character content in the **textBytes** field of the following table represents the center body placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066E4 | 0014 | **D**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 000066E4 | 0008 | RecordHeader **- rh** |  |
| 000066E4 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000066E4 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000066E6 | 0002 | RecordType **- recType** | 0x0FA8 |
| 000066E8 | 0004 | unsigned integer **- recLen** | 0x0000000C |
| 000066EC | 000C | array of bytes **- textBytes** | presentation |

Figure 31: Outline TextBytesAtom record D

**textBytes:** "presentation" specifies the center body placeholder shape text.

The third line of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records E and F, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006714 | 000C | **E**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 00006714 | 0008 | RecordHeader **- rh** |  |
| 00006714 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006714 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006716 | 0002 | RecordType **- recType** | 0x0F9F |
| 00006718 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 0000671C | 0004 | TextTypeEnum **- textType** | 0x00000000 |

Figure 32: Outline TextHeaderAtom record E

**textType:** 0x00000000 specifies that the following character content in the **textBytes** field of the following table represents the title placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006720 | 0013 | **F**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 00006720 | 0008 | RecordHeader **- rh** |  |
| 00006720 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006720 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006722 | 0002 | RecordType **- recType** | 0x0FA8 |
| 00006724 | 0004 | unsigned integer **- recLen** | 0x0000000B |
| 00006728 | 000B | array of bytes **- textBytes** | the weather |

Figure 33: Outline TextBytesAtom record F

**textBytes:** "the weather" specifies the title placeholder shape text.

Lines four through six of the outline text as shown in the figure titled "Outline text" in section 3.1 are derived from records G and H, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006733 | 000C | **G**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 00006733 | 0008 | RecordHeader **- rh** |  |
| 00006733 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006733 | 12 bits | unsigned integer **- recInstance** | 0x001 |
| 00006735 | 0002 | RecordType **- recType** | 0x0F9F |
| 00006737 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 0000673B | 0004 | TextTypeEnum **- textType** | 0x00000001 |

Figure 34: Outline TextHeaderAtom record G

**textType:** 0x00000001 specifies that the following character content in the **textBytes** field of the following table represents the body placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000673F | 0031 | **H**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 0000673F | 0008 | RecordHeader **- rh** |  |
| 0000673F | 4 bits | unsigned integer **- recVer** | 0x0 |
| 0000673F | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006741 | 0002 | RecordType **- recType** | 0x0FA8 |
| 00006743 | 0004 | unsigned integer **- recLen** | 0x00000029 |
| 00006747 | 0029 | array of bytes **- textBytes** | a sunny day\rthe blue sky\rsome green grass |

Figure 35: Outline TextBytesAtom record H

**textBytes:** "a sunny day\rthe blue sky\rsome green grass" specifies the body placeholder shape text. Each line break in the text, shown as "\r", is displayed as a separate outline item shown in the figure titled "Outline text" in section 3.1.

Line seven of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records I and J, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000067AE | 000C | **I**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 000067AE | 0008 | RecordHeader **- rh** |  |
| 000067AE | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000067AE | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000067B0 | 0002 | RecordType **- recType** | 0x0F9F |
| 000067B2 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 000067B6 | 0004 | TextTypeEnum **- textType** | 0x00000000 |

Figure 36: Outline TextHeaderAtom record I

**textType:** 0x00000000 specifies that the following character content in the **textBytes** field of the following table represents the title placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000067BA | 0016 | **J**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 000067BA | 0008 | RecordHeader **- rh** |  |
| 000067BA | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000067BA | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000067BC | 0002 | RecordType **- recType** | 0x0FA8 |
| 000067BE | 0004 | unsigned integer **- recLen** | 0x0000000E |
| 000067C2 | 000E | array of bytes **- textBytes** | a green square |

Figure 37: Outline TextBytesAtom record J

**textBytes:** "a green square" specifies the title placeholder shape text.

Line eight of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records K and L, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000680A | 000C | **K**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 0000680A | 0008 | RecordHeader **- rh** |  |
| 0000680A | 4 bits | unsigned integer **- recVer** | 0x0 |
| 0000680A | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 0000680C | 0002 | RecordType **- recType** | 0x0F9F |
| 0000680E | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 00006812 | 0004 | TextTypeEnum **- textType** | 0x00000000 |

Figure 38: Outline TextHeaderAtom record K

**textType:** 0x00000000 specifies that the following character content in the **textBytes** field of the following table represents the title placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006816 | 0015 | **L**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 00006816 | 0008 | RecordHeader **- rh** |  |
| 00006816 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006816 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006818 | 0002 | RecordType **- recType** | 0x0FA8 |
| 0000681A | 0004 | unsigned integer **- recLen** | 0x0000000D |
| 0000681E | 000D | array of bytes **- textBytes** | a hungry bear |

Figure 39: Outline TextBytesAtom record L

**textBytes:** "a hungry bear" specifies the title placeholder shape text.

Line nine of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records M and N, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006847 | 000C | **M**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 00006847 | 0008 | RecordHeader **- rh** |  |
| 00006847 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006847 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006849 | 0002 | RecordType **- recType** | 0x0F9F |
| 0000684B | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 0000684F | 0004 | TextTypeEnum **- textType** | 0x00000000 |

Figure 40: Outline TextHeaderAtom record M

**textType:** 0x00000000 specifies that the following character content in the **textBytes** field of the following table represents the title placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006853 | 0019 | **N**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 00006853 | 0008 | RecordHeader **- rh** |  |
| 00006853 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006853 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006855 | 0002 | RecordType **- recType** | 0x0FA8 |
| 00006857 | 0004 | unsigned integer **- recLen** | 0x00000011 |
| 0000685B | 0011 | array of bytes **- textBytes** | a fruit pie chart |

Figure 41: Outline TextBytesAtom record N

**textBytes:** "a fruit pie chart" specifies the title placeholder shape text.

The last line of the outline text as shown in the figure titled "Outline text" in section 3.1 is derived from records O and P, which are shown expanded in the following tables.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006888 | 000C | **O**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 00006888 | 0008 | RecordHeader **- rh** |  |
| 00006888 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006888 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 0000688A | 0002 | RecordType **- recType** | 0x0F9F |
| 0000688C | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 00006890 | 0004 | TextTypeEnum **- textType** | 0x00000000 |

Figure 42: Outline TextHeaderAtom record O

**textType:** 0x00000000 specifies that the following character content in the **textBytes** field of the following table represents the title placeholder shape text.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006894 | 0018 | **P**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 00006894 | 0008 | RecordHeader **- rh** |  |
| 00006894 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006894 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006896 | 0002 | RecordType **- recType** | 0x0FA8 |
| 00006898 | 0004 | unsigned integer **- recLen** | 0x00000010 |
| 0000689C | 0010 | array of bytes **- textBytes** | shapes with text |

Figure 43: Outline TextBytesAtom record P

**textBytes:** "shapes with text" specifies the title placeholder shape text.

For more information about how the outline text formatting as shown in the figure titled "Outline text" in section 3.1, for example bullet points, font face, and font size, is derived, see the [Text Example](#Section_0671ec5911024c8fb2fbec549db17d8b) section.

## Slides

The following sections provide examples of a [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d), a [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e), a [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a), [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192), and [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65).

### Master Slides

This example explains how to locate the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d), the [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e), and the [**notes master slide**](#gt_aac4400d-363e-4735-bf6e-bb8fd9b6120a).

The main master slide and title master slide are found by means of the **MasterPersistAtom** records (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775)) contained within the **MasterListWithTextContainer** record (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)). The child-record hierarchy of the **MasterListWithTextContainer** record A from the table titled "DocumentContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00006159 | 0040 | **A**: MasterListWithTextContainer **- masterList** |
| 00006159 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 00006161 | 001C | **B**: MasterPersistAtom **- masterPersistAtom** |
| 0000617D | 001C | **C**: MasterPersistAtom **- masterPersistAtom** |

Figure 44: MasterListWithTextContainer record A child-record hierarchy

The child-record hierarchy of the **MasterPersistAtom** record B from previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006161 | 001C | **B**: MasterPersistAtom **- masterPersistAtom** |  |
| 00006161 | 0008 | RecordHeader **- rh** |  |
| 00006169 | 0004 | [PersistIdRef](#Section_7fbfdcc25bb148eeb886357d39fce18f) **- persistIdRef** | 0x00000002 |
| 0000616D | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 0000616D | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 0000616D | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 00006171 | 0004 | signed integer **- reserved3** | 0x00000000 |
| 00006175 | 0004 | [MasterId](#Section_fa12046c7ff945418f763ed799dcffc4) **- masterId** | 0x80000000 |
| 00006179 | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 45: MasterPersistAtom record B child-record hierarchy

**persistIdRef:** 0x00000002 specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1), shown in the last table in section [3.2](#Section_5bda800966124679a6eb6fb83cbcf195), to find the [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68) stream offset 0x00000CC5. This offset matches the offset for the **MainMasterContainer** (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) record B in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section [3.3](#Section_7bd57959d49c48a1940abde37ec93c6f). This **MainMasterContainer** record represents the main master slide as shown in figure titled "Main master slide" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the **MasterPersistAtom** record C from the previous table titled "MasterListWithTextContainer record A child-record hierarchy" is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000617D | 001C | **C**: MasterPersistAtom **- masterPersistAtom** |  |
| 0000617D | 0008 | RecordHeader **- rh** |  |
| 00006185 | 0004 | PersistIdRef **- persistIdRef** | 0x00000003 |
| 00006189 | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 00006189 | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 00006189 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 0000618D | 0004 | signed integer **- reserved3** | 0x00000000 |
| 00006191 | 0004 | MasterId **- masterId** | 0x80000001 |
| 00006195 | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 46: MasterPersistAtom record C child-record hierarchy

**persistIdRef:** 0x00000003 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00001671. This offset matches the offset for the **SlideContainer** (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) the record C in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3. This **SlideContainer** record represents the title master slide as shown in figure titled "Title master slide" in section 3.1.

The notes master slide is found by means of the **DocumentAtom** record (section [2.4.2](#Section_121f272834974a0a829e6f416fee2ee6)) contained within the **DocumentContainer** record (section [2.4.1](#Section_6254c4d152174e16b20dc04ddcce31c9)). The **DocumentAtom** record E from the table titled "DocumentContainer child-record hierarchy" in section 3.4 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005C71 | 0030 | **E**: DocumentAtom **- documentAtom** |  |
| 00005C71 | 0008 | RecordHeader **- rh** |  |
| 00005C79 | 0008 | [PointStruct](#Section_5faffdc98cdf4bd0a2289a122d01b3f2) **- slideSize** |  |
| 00005C81 | 0008 | PointStruct **- notesSize** |  |
| 00005C89 | 0008 | [RatioStruct](#Section_32cd4da38d474599ace5d608331e1214) **- serverZoom** |  |
| 00005C91 | 0004 | PersistIdRef **- notesMasterPersistIdRef** | 0x0000000B |
| 00005C95 | 0004 | PersistIdRef **- handoutMasterPersistIdRef** | 0x00000000 |
| 00005C99 | 0002 | unsigned integer **- firstSlideNumber** | 0x0001 |
| 00005C9B | 0002 | [SlideSizeEnum](#Section_2e9fc1fd73db465f93e17f975b7f14a6) **- slideSizeType** | 0x0000 |
| 00005C9D | 0001 | [bool1](#Section_bab65619e61c4616aab01313e15978fb) **- fSaveWithFonts** | 0x00 |
| 00005C9E | 0001 | bool1 **- fOmitTitlePlace** | 0x00 |
| 00005C9F | 0001 | bool1 **- fRightToLeft** | 0x00 |
| 00005CA0 | 0001 | bool1 **- fShowComments** | 0x01 |

Figure 47: DocumentAtom record E child-record hierarchy

**notesMasterPersistIdRef:** 0x0000000B specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00001B98. This offset matches the offset for the **NotesContainer** (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)) record D in section 3.3. This **NotesContainer** record (section 2.5.6) represents the notes master slide as shown in figure titled "Notes master slide" in section 3.1.

### Presentation Slides

The [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192) are found by means of the **SlidePersistAtom** records (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) contained within the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)). The child-record hierarchy of the **SlideListWithTextContainer** (section 2.4.14.3) record B from the table titled "DocumentContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00006698 | 0214 | SlideListWithTextContainer **- slideList** |
| 00006698 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 000066A0 | 001C | **A**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 000066BC | 000C | [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) **- case of RT\_TextHeaderAtom** |
| 000066C8 | 0010 | [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) **- case of RT\_TextBytesAtom** |
| 000066D8 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 000066E4 | 0014 | TextBytesAtom **- case of RT\_TextBytesAtom** |
| 000066F8 | 001C | **B**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 00006714 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006720 | 0013 | TextBytesAtom **- case of RT\_TextBytesAtom** |
| 00006733 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 0000673F | 0031 | TextBytesAtom **- case of RT\_TextBytesAtom** |
| 00006770 | 0022 | [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) **- case of RT\_StyleTextPropAtom** |
| 00006792 | 001C | **C**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 000067AE | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 000067BA | 0016 | TextBytesAtom **- case of RT\_TextBytesAtom** |
| 000067D0 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 000067DC | 0012 | [TextSpecialInfoAtom](#Section_382afea69dc34b6c820611abef8b8366) **- case of RT\_TextSpecialInfoAtom** |
| 000067EE | 001C | **D**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 0000680A | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006816 | 0015 | TextBytesAtom **- case of RT\_TextBytesAtom** |
| 0000682B | 001C | **E**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 00006847 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006853 | 0019 | TextBytesAtom **- case of RT\_TextBytesAtom** |
| 0000686C | 001C | **F**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |
| 00006888 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |
| 00006894 | 0018 | TextBytesAtom **- case of RT\_TextBytesAtom** |

Figure 48: SlideListWithTextContainer child-record hierarchy

The child-record hierarchy of the **SlidePersistAtom** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066A0 | 001C | **A**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |  |
| 000066A0 | 0008 | RecordHeader **- rh** |  |
| 000066A8 | 0004 | [PersistIdRef](#Section_7fbfdcc25bb148eeb886357d39fce18f) **- persistIdRef** | 0x00000004 |
| 000066AC | 1 bit | bit **- reserved1** | 0x0 |
| 000066AC | 1 bit | bit **- fShouldCollapse** | 0x0 |
| 000066AC | 1 bit | bit **- fNonOutlineData** | 0x1 |
| 000066AC | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 000066B0 | 0004 | signed integer **- cTexts** | 0x00000002 |
| 000066B4 | 0004 | [SlideId](#Section_747d514b9d774a728b61fe226882944c) **- slideId** | 0x00000100 |
| 000066B8 | 0004 | unsigned integer **- reserved3** | 0x00000000 |

Figure 49: SlidePersistAtom record A child-record hierarchy

**persistIdRef:** 0x00000004 specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1), shown in the last table in section [3.2](#Section_5bda800966124679a6eb6fb83cbcf195), to find the [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68) stream offset 0x000021C8. This offset matches the offset for the **SlideContainer** (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) record E in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section [3.3](#Section_7bd57959d49c48a1940abde37ec93c6f). This **SlideContainer** record represents the first presentation slide as shown in figure titled "Presentation slide 1" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of **SlideContainer** record E from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000021C8 | 022C | **E**: SlideContainer |  |
| 000021C8 | 0008 | RecordHeader **- rh** |  |
| 000021D0 | 0020 | [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) **- slideAtom** |  |
| 000021D0 | 0008 | RecordHeader **- rh** |  |
| 000021D8 | 0004 | [SlideLayoutType](#Section_df8f3d7bdb6747dc8c8920f5cbbf0fa9) **- geom** | 0x00000000 |
| 000021DC | 0001 | [PlaceholderEnum](#Section_dbfd04be077644d9b408b07f4c951eaf) **- pt** | 0x0F |
| 000021DD | 0001 | PlaceholderEnum **- pt** | 0x10 |
| 000021DE | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000021DF | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000021E0 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000021E1 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000021E2 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000021E3 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000021E4 | 0004 | [MasterIdRef](#Section_ac1a16ba424a4f51b11d2914281bdfa5) **- masterIdRef** | 0x80000001 |
| 000021E8 | 0004 | [NotesIdRef](#Section_ac43d4cb9e9d4a2cadb44f3da8381d8e) **- notesIdRef** | 0x00000105 |
| 000021EC | 0002 | [SlideFlags](#Section_a840eba8ed0347a0a0c9769236e21a0b) **- slideFlags** |  |
| 000021EC | 1 bit | bit **- fMasterObjects** | 0x1 |
| 000021EC | 1 bit | bit **- fMasterScheme** | 0x1 |
| 000021EC | 1 bit | bit **- fMasterBackground** | 0x1 |
| 000021EC | 13 bits | unsigned integer **- reserved** | 0x0000 |
| 000021EE | 0002 | unsigned integer **- unused** | 0x3014 |
| 000021F0 | 019C | [DrawingContainer](#Section_0595b49fda964402b3531f766e9d548f) **- drawing** |  |
| 0000238C | 0028 | [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) **- slideSchemeColorSchemeAtom** |  |
| 000023B4 | 0040 | [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) **- slideProgTagsContainer** |  |

Figure 50: SlideContainer record E child-record hierarchy

**slideAtom.masterIdRef:** 0x80000001 specifies a reference to the **masterId** field in the table titled "MasterPersistAtom record C child-record hierarchy" in section [3.5.1](#Section_8c1f895903c846f09f811ef072f958aa), the **MasterPersistAtom** (section [2.4.14.2](#Section_ffcca362b8604a3d900e5c03f02c1775))for the [**title master slide**](#gt_2b014bfb-d82f-41d9-9cd9-0101fd1b0c4e). This specifies that this presentation slide follows the title master slide.

**slideAtom.slideFlags.fMasterBackground:** 0x0001 specifies that this presentation slide will inherit the background from the title master slide as shown in figure titled "Title master slide" in section 3.1.

The child-record hierarchy of the **SlidePersistAtom** record B from the table titled "SlideListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066F8 | 001C | **B**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |  |
| 000066F8 | 0008 | RecordHeader **- rh** |  |
| 00006700 | 0004 | PersistIdRef **- persistIdRef** | 0x00000005 |
| 00006704 | 1 bit | bit **- reserved1** | 0x0 |
| 00006704 | 1 bit | bit **- fShouldCollapse** | 0x0 |
| 00006704 | 1 bit | bit **- fNonOutlineData** | 0x1 |
| 00006704 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 00006708 | 0004 | signed integer **- cTexts** | 0x00000002 |
| 0000670C | 0004 | SlideId **- slideId** | 0x00000101 |
| 00006710 | 0004 | unsigned integer **- reserved3** | 0x00000000 |

Figure 51: SlidePersistAtom record B child-record hierarchy

**persistIdRef:** 0x00000005 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x000023F4. This offset matches the offset for the **SlideContainer** (section 2.5.1) record F in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3. This **SlideContainer** record represents the second presentation slide as shown in figure titled "Presentation slide 2" in section 3.1.

The child-record hierarchy of **SlideContainer** record F from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000023F4 | 0A8D | **F**: SlideContainer |  |
| 000023F4 | 0008 | RecordHeader **- rh** |  |
| 000023FC | 0020 | SlideAtom **- slideAtom** |  |
| 000023FC | 0008 | RecordHeader **- rh** |  |
| 00002404 | 0004 | SlideLayoutType **- geom** | 0x00000001 |
| 00002408 | 0001 | PlaceholderEnum **- pt** | 0x0D |
| 00002409 | 0001 | PlaceholderEnum **- pt** | 0x0E |
| 0000240A | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000240B | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000240C | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000240D | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000240E | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000240F | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00002410 | 0004 | unsigned integer **- masterIdRef** | 0x80000000 |
| 00002414 | 0004 | unsigned integer **- notesIdRef** | 0x00000104 |
| 00002418 | 0002 | SlideFlags **- slideFlags** |  |
| 00002418 | 1 bit | bit **- fMasterObjects** | 0x1 |
| 00002418 | 1 bit | bit **- fMasterScheme** | 0x1 |
| 00002418 | 1 bit | bit **- fMasterBackground** | 0x1 |
| 00002418 | 13 bits | unsigned integer **- reserved** | 0x0000 |
| 0000241A | 0002 | unsigned integer **- unused** | 0x3014 |
| 0000241C | 01C8 | DrawingContainer **- drawing** |  |
| 000025E4 | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 0000260C | 0875 | **A**: SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 52: SlideContainer record F child-record hierarchy

**slideAtom.masterIdRef:** 0x80000000 specifies a reference to the **masterId** field in the table titled "MasterPersistAtom record B child-record hierarchy" in section 3.5.1, the **MasterPersistAtom** for the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d). This specifies that this presentation slide follows the main master slide.

**slideAtom.slideFlags.fMasterBackground:** 0x0001 specifies this presentation slide will inherit the background from the main master slide as shown in figure titled "Main master slide" in section 3.1.

The child-record hierarchy of the **SlidePersistAtom** record C from the table titled "SlideListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006792 | 001C | **C**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |  |
| 00006792 | 0008 | RecordHeader **- rh** |  |
| 0000679A | 0004 | PersistIdRef **- persistIdRef** | 0x00000006 |
| 0000679E | 1 bit | bit **- reserved1** | 0x0 |
| 0000679E | 1 bit | bit **- fShouldCollapse** | 0x0 |
| 0000679E | 1 bit | bit **- fNonOutlineData** | 0x1 |
| 0000679E | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 000067A2 | 0004 | signed integer **- cTexts** | 0x00000002 |
| 000067A6 | 0004 | SlideId **- slideId** | 0x00000102 |
| 000067AA | 0004 | unsigned integer **- reserved3** | 0x00000000 |

Figure 53: SlidePersistAtom record C child-record hierarchy

**persistIdRef:** 0x00000006 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00006964. This offset matches the offset for the **SlideContainer** (section 2.5.1) record T in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3. This **SlideContainer** record represents the third presentation slide as shown in figure titled "Presentation slide 3" in section 3.1.

The child-record hierarchy of **SlideContainer** record T from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006964 | 1192 | **T**: SlideContainer |  |
| 00006964 | 0008 | RecordHeader **- rh** |  |
| 0000696C | 0020 | SlideAtom **- slideAtom** |  |
| 0000696C | 0008 | RecordHeader **- rh** |  |
| 00006974 | 0004 | SlideLayoutType **- geom** | 0x00000001 |
| 00006978 | 0001 | PlaceholderEnum **- pt** | 0x0D |
| 00006979 | 0001 | PlaceholderEnum **- pt** | 0x0E |
| 0000697A | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000697B | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000697C | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000697D | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000697E | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 0000697F | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00006980 | 0004 | MasterIdRef **- masterIdRef** | 0x80000000 |
| 00006984 | 0004 | NotesIdRef **- notesIdRef** | 0x00000103 |
| 00006988 | 0002 | SlideFlags **- slideFlags** |  |
| 00006988 | 1 bit | bit **- fMasterObjects** | 0x1 |
| 00006988 | 1 bit | bit **- fMasterScheme** | 0x1 |
| 00006988 | 1 bit | bit **- fMasterBackground** | 0x0 |
| 00006988 | 13 bits | unsigned integer **- reserved** | 0x0000 |
| 0000698A | 0002 | unsigned integer **- unused** | 0x3014 |
| 0000698C | 020E | DrawingContainer **- drawing** |  |
| 00006B9A | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 00006BC2 | 0F34 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 54: SlideContainer record T child-record hierarchy

**slideAtom.masterIdRef:** 0x80000000 specifies a reference to the **masterId** field in the table titled "MasterPersistAtom record B child-record hierarchy" in section 3.5.1, the **MasterPersistAtom** for the main master slide. This specifies that this presentation slide follows the main master slide.

**slideAtom.slideFlags.fMasterBackground:** 0x0000 specifies this slide does not inherit the background from the main master slide and provides its own background as shown in figure titled "Presentation slide 3" in section 3.1.

The child-record hierarchy of the **SlidePersistAtom** record D from the table titled "SlideListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000067EE | 001C | **D**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |  |
| 000067EE | 0008 | RecordHeader **- rh** |  |
| 000067F6 | 0004 | PersistIdRef **- persistIdRef** | 0x00000008 |
| 000067FA | 1 bit | bit **- reserved1** | 0x0 |
| 000067FA | 1 bit | bit **- fShouldCollapse** | 0x0 |
| 000067FA | 1 bit | bit **- fNonOutlineData** | 0x1 |
| 000067FA | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 000067FE | 0004 | signed integer **- cTexts** | 0x00000001 |
| 00006802 | 0004 | SlideId **- slideId** | 0x00000103 |
| 00006806 | 0004 | unsigned integer **- reserved3** | 0x00000000 |

Figure 55: SlidePersistAtom record D child-record hierarchy

**persistIdRef:** 0x00000008 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x000037B5. This offset matches the offset for the **SlideContainer** (section 2.5.1) record I in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3. This **SlideContainer** record represents the fourth presentation slide as shown in figure titled "Presentation slide 4" in section 3.1.

The child-record hierarchy of **SlideContainer** record I from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000037B5 | 06CE | **I**: SlideContainer |  |
| 000037B5 | 0008 | RecordHeader **- rh** |  |
| 000037BD | 0020 | SlideAtom **- slideAtom** |  |
| 000037BD | 0008 | RecordHeader **- rh** |  |
| 000037C5 | 0004 | SlideLayoutType **- geom** | 0x00000001 |
| 000037C9 | 0001 | PlaceholderEnum **- pt** | 0x0D |
| 000037CA | 0001 | PlaceholderEnum **- pt** | 0x13 |
| 000037CB | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000037CC | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000037CD | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000037CE | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000037CF | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000037D0 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 000037D1 | 0004 | MasterIdRef **- masterIdRef** | 0x80000000 |
| 000037D5 | 0004 | NotesIdRef **- notesIdRef** | 0x00000102 |
| 000037D9 | 0002 | SlideFlags **- slideFlags** |  |
| 000037D9 | 1 bit | bit **- fMasterObjects** | 0x1 |
| 000037D9 | 1 bit | bit **- fMasterScheme** | 0x1 |
| 000037D9 | 1 bit | bit **- fMasterBackground** | 0x1 |
| 000037D9 | 13 bits | unsigned integer **- reserved** | 0x0000 |
| 000037DB | 0002 | unsigned integer **- unused** | 0x3014 |
| 000037DD | 01BA | DrawingContainer **- drawing** |  |
| 00003997 | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 000039BF | 04C4 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 56: SlideContainer record I child-record hierarchy

**slideAtom.masterIdRef:** 0x80000000 specifies a reference to the **masterId** field in the table titled "MasterPersistAtom record B child-record hierarchy" in section 3.5.1, the **MasterPersistAtom** for the main master slide. This specifies that this presentation slide follows the main master slide.

**slideAtom.slideFlags.fMasterBackground:** 0x0001 specifies that this presentation slide will inherit the background from the main master slide as shown in figure titled "Main master slide" in section 3.1.

The child-record hierarchy of the **SlidePersistAtom** record E from the table titled "SlideListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000682B | 001C | **E**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |  |
| 0000682B | 0008 | RecordHeader **- rh** |  |
| 00006833 | 0004 | PersistIdRef **- persistIdRef** | 0x00000009 |
| 00006837 | 1 bit | bit **- reserved1** | 0x0 |
| 00006837 | 1 bit | bit **- fShouldCollapse** | 0x0 |
| 00006837 | 1 bit | bit **- fNonOutlineData** | 0x1 |
| 00006837 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 0000683B | 0004 | signed integer **- cTexts** | 0x00000001 |
| 0000683F | 0004 | SlideId **- slideId** | 0x00000104 |
| 00006843 | 0004 | unsigned integer **- reserved3** | 0x00000000 |

Figure 57: SlidePersistAtom record E child-record hierarchy

**persistIdRef:** 0x00000009 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00003E83. This offset matches the offset for the **SlideContainer** (section 2.5.1) record J in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3. This **SlideContainer** record represents the fifth presentation slide as shown in figure titled "Presentation slide 5" in section 3.1.

The child-record hierarchy of **SlideContainer** record J from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00003E83 | 0248 | **J**: SlideContainer |  |
| 00003E83 | 0008 | RecordHeader **- rh** |  |
| 00003E8B | 0020 | SlideAtom **- slideAtom** |  |
| 00003E8B | 0008 | RecordHeader **- rh** |  |
| 00003E93 | 0004 | SlideLayoutType **- geom** | 0x00000001 |
| 00003E97 | 0001 | PlaceholderEnum **- pt** | 0x0D |
| 00003E98 | 0001 | PlaceholderEnum **- pt** | 0x14 |
| 00003E99 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00003E9A | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00003E9B | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00003E9C | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00003E9D | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00003E9E | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00003E9F | 0004 | MasterIdRef **- masterIdRef** | 0x80000000 |
| 00003EA3 | 0004 | NotesIdRef **- notesIdRef** | 0x00000101 |
| 00003EA7 | 0002 | SlideFlags **- slideFlags** |  |
| 00003EA7 | 1 bit | bit **- fMasterObjects** | 0x1 |
| 00003EA7 | 1 bit | bit **- fMasterScheme** | 0x1 |
| 00003EA7 | 1 bit | bit **- fMasterBackground** | 0x1 |
| 00003EA7 | 13 bits | unsigned integer **- reserved** | 0x0000 |
| 00003EA9 | 0002 | unsigned integer **- unused** | 0x3014 |
| 00003EAB | 01B8 | **A**: DrawingContainer **- drawing** |  |
| 00004063 | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 0000408B | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 58: SlideContainer record J child-record hierarchy

**slideAtom.masterIdRef:** 0x80000000 specifies a reference to the **masterId** field in the table titled "MasterPersistAtom record B child-record hierarchy" in section 3.5.1, the **MasterPersistAtom** for the main master slide. This specifies that this presentation slide follows the main master slide.

**slideAtom.slideFlags.fMasterBackground:** 0x0001 specifies that this presentation slide will inherit the background from the main master slide as shown in figure titled "Main master slide" in section 3.1.

The child-record hierarchy of the **SlidePersistAtom** record F from the table titled "SlideListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000686C | 001C | **F**: SlidePersistAtom **- case of RT\_SlidePersistAtom** |  |
| 0000686C | 0008 | RecordHeader **- rh** |  |
| 00006874 | 0004 | PersistIdRef **- persistIdRef** | 0x00000013 |
| 00006878 | 1 bit | bit **- reserved1** | 0x0 |
| 00006878 | 1 bit | bit **- fShouldCollapse** | 0x0 |
| 00006878 | 1 bit | bit **- fNonOutlineData** | 0x1 |
| 00006878 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 0000687C | 0004 | signed integer **- cTexts** | 0x00000001 |
| 00006880 | 0004 | SlideId **- slideId** | 0x00000105 |
| 00006884 | 0004 | unsigned integer **- reserved3** | 0x00000000 |

Figure 59: SlidePersistAtom record F child-record hierarchy

**persistIdRef:** 0x00000013 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00007AF6. This offset matches the offset for the **SlideContainer** (section 2.5.1) record U in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3. This represents the sixth and final presentation slide as shown in figure titled "Presentation slide 6" in section 3.1.

The child-record hierarchy of **SlideContainer** record U from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007AF6 | 04ED | **U**: SlideContainer |  |
| 00007AF6 | 0008 | RecordHeader **- rh** |  |
| 00007AFE | 0020 | SlideAtom **- slideAtom** |  |
| 00007AFE | 0008 | RecordHeader **- rh** |  |
| 00007B06 | 0004 | SlideLayoutType **- geom** | 0x00000007 |
| 00007B0A | 0001 | PlaceholderEnum **- pt** | 0x0D |
| 00007B0B | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B0C | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B0D | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B0E | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B0F | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B10 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B11 | 0001 | PlaceholderEnum **- pt** | 0x00 |
| 00007B12 | 0004 | MasterIdRef **- masterIdRef** | 0x80000000 |
| 00007B16 | 0004 | NotesIdRef **- notesIdRef** | 0x00000106 |
| 00007B1A | 0002 | SlideFlags **- slideFlags** |  |
| 00007B1A | 1 bit | bit **- fMasterObjects** | 0x1 |
| 00007B1A | 1 bit | bit **- fMasterScheme** | 0x1 |
| 00007B1A | 1 bit | bit **- fMasterBackground** | 0x1 |
| 00007B1A | 13 bits | unsigned integer **- reserved** | 0x0000 |
| 00007B1C | 0002 | unsigned integer **- unused** | 0x3014 |
| 00007B1E | 003A | **B**: [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) **- perSlideHFContainer** |  |
| 00007B58 | 0423 | **A**: DrawingContainer **- drawing** |  |
| 00007F7B | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 00007FA3 | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 60: SlideContainer record U child-record hierarchy

**slideAtom.masterIdRef:** 0x80000000 specifies a reference to the **masterId** field in the table titled "MasterPersistAtom record B child-record hierarchy" in section 3.5.1, the **MasterPersistAtom** for the main master slide. This specifies that this presentation slide follows the main master slide.

**slideAtom.slideFlags.fMasterBackground:** 0x0001 specifies that this presentation slide will inherit the background from the main master slide as shown in figure titled "Main master slide" in section 3.1.

### Notes Slides

The [**notes slides**](#gt_11f65738-9d6c-453b-84b1-87c6550bee65) are found by means of the **NotesPersistAtom** records (section [2.4.14.7](#Section_b595ad14a46c4fccb4bd7298712043a4)) contained within the **NotesListWithTextContainer** record (section [2.4.14.6](#Section_55453e3706744703bd8dfcaba335f840)). Unlike in the previous example, where the order of the **SlidePersistAtom** records (section [2.4.14.5](#Section_48dce41296924f93aeb73d9fdd3a0a5a)) contained within the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)) determines the order of the [**presentation slides**](#gt_18428521-9032-41a4-85c4-6fb65d882192), the order of the **NotesPersistAtom** recordsis not meaningful. A notes slide is associated with its presentation slide by means of the **slideIdRef** field in the **NotesContainer** record (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)).

The child-record hierarchy of the **NotesListWithTextContainer** record C from the table titled "DocumentContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 000068AC | 00B0 | NotesListWithTextContainer **- notesList** |
| 000068AC | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 000068B4 | 001C | **A**: NotesPersistAtom **- notesPersistAtom** |
| 000068D0 | 001C | **B**: NotesPersistAtom **- notesPersistAtom** |
| 000068EC | 001C | **C**: NotesPersistAtom **- notesPersistAtom** |
| 00006908 | 001C | **D**: NotesPersistAtom **- notesPersistAtom** |
| 00006924 | 001C | **E**: NotesPersistAtom **- notesPersistAtom** |
| 00006940 | 001C | **F**: NotesPersistAtom **- notesPersistAtom** |

Figure 61: NotesListWithTextContainer child-record hierarchy

The child-record hierarchy of the **NotesPersistAtom** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000068B4 | 001C | **A**: NotesPersistAtom **- notesPersistAtom** |  |
| 000068B4 | 0008 | RecordHeader **- rh** |  |
| 000068BC | 0004 | [PersistIdRef](#Section_7fbfdcc25bb148eeb886357d39fce18f) **- persistIdRef** | 0x0000000D |
| 000068C0 | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 000068C0 | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 000068C0 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 000068C4 | 0004 | signed integer **- reserved3** | 0x00000000 |
| 000068C8 | 0004 | [NotesId](#Section_a2ed19fb4b5b4f938ef9baa2284ecd2b) **- notesId** | 0x00000101 |
| 000068CC | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 62: NotesPersistAtom record A child-record hierarchy

**persistIdRef:** 0x0000000D specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1), shown in the last in section [3.2](#Section_5bda800966124679a6eb6fb83cbcf195), to find the [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68) stream offset 0x000040CB. This offset matches the offset for the **NotesContainer** (section 2.5.6) record K in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section [3.3](#Section_7bd57959d49c48a1940abde37ec93c6f).

The child-record hierarchy of the **NotesContainer** (section 2.5.6) record K from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000040CB | 024E | **K**: NotesContainer |  |
| 000040CB | 0008 | RecordHeader **- rh** |  |
| 000040D3 | 0010 | [NotesAtom](#Section_9bb3e3521014477bb286cd43127c3b74) **- notesAtom** |  |
| 000040D3 | 0008 | RecordHeader **- rh** |  |
| 000040DB | 0004 | [SlideIdRef](#Section_74a76957a2534455b8a4f82e650808fb) **- slideIdRef** | 0x00000104 |
| 000040DF | 0002 | [SlideFlags](#Section_a840eba8ed0347a0a0c9769236e21a0b) **- slideFlags** |  |
| 000040E3 | 01CE | [DrawingContainer](#Section_0595b49fda964402b3531f766e9d548f) **- drawing** |  |
| 000042B1 | 0028 | [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) **- slideSchemeColorSchemeAtom** |  |
| 000042D9 | 0040 | [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) **- slideProgTagsContainer** |  |

Figure 63: NotesContainer record K child-record hierarchy

**notesAtom.slideIdRef:** 0x00000104 specifies a reference to the **slideId** field in the table titled "SlidePersistAtom record E child-record hierarchy" in section [3.5.2](#Section_cb3376a86bd64c62b579081eef2195b5), the **SlidePersistAtom** for the fifth presentation slide. This **NotesContainer** record (section 2.5.6) represents the fifth notes slide as shown in figure titled "Notes slide 5" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the **NotesPersistAtom** record B from the table titled "NotesListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000068D0 | 001C | **B**: NotesPersistAtom **- notesPersistAtom** |  |
| 000068D0 | 0008 | RecordHeader **- rh** |  |
| 000068D8 | 0004 | PersistIdRef **- persistIdRef** | 0x0000000E |
| 000068DC | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 000068DC | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 000068DC | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 000068E0 | 0004 | signed integer **- reserved3** | 0x00000000 |
| 000068E4 | 0004 | NotesId **- notesId** | 0x00000102 |
| 000068E8 | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 64: NotesPersistAtom record B child-record hierarchy

**persistIdRef:** 0x0000000E specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00004319. This offset matches the offset for the **NotesContainer** (section 2.5.6) record L in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3.

The child-record hierarchy of the **NotesContainer** (section 2.5.6) record L from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00004319 | 02BB | **L**: NotesContainer |  |
| 00004319 | 0008 | RecordHeader **- rh** |  |
| 00004321 | 0010 | NotesAtom **- notesAtom** |  |
| 00004321 | 0008 | RecordHeader **- rh** |  |
| 00004329 | 0004 | SlideIdRef **- slideIdRef** | 0x00000103 |
| 0000432D | 0002 | SlideFlags **- slideFlags** |  |
| 00004331 | 023B | DrawingContainer **- drawing** |  |
| 0000456C | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 00004594 | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 65: NotesContainer record L child-record hierarchy

**notesAtom.slideIdRef:** 0x00000103 specifies a reference to the **slideId** field in the table titled "SlidePersistAtom record D child-record hierarchy" in section 3.5.2, the **SlidePersistAtom** for the fourth presentation slide. This **NotesContainer** record (section 2.5.6) represents the fourth notes slide as shown in figure titled "Notes slide 4" in section 3.1.

The child-record hierarchy of the **NotesPersistAtom** record C from the table titled "NotesListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000068EC | 001C | **C**: NotesPersistAtom **- notesPersistAtom** |  |
| 000068EC | 0008 | RecordHeader **- rh** |  |
| 000068F4 | 0004 | PersistIdRef **- persistIdRef** | 0x0000000F |
| 000068F8 | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 000068F8 | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 000068F8 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 000068FC | 0004 | signed integer **- reserved3** | 0x00000000 |
| 00006900 | 0004 | NotesId **- notesId** | 0x00000103 |
| 00006904 | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 66: NotesPersistAtom record C child-record hierarchy

**persistIdRef:** 0x0000000F specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x000045D4. This offset matches the offset for the **NotesContainer** (section 2.5.6) record M in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3.

The child-record hierarchy of the **NotesContainer** (section 2.5.6) record M from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000045D4 | 029F | **M**: NotesContainer |  |
| 000045D4 | 0008 | RecordHeader **- rh** |  |
| 000045DC | 0010 | NotesAtom **- notesAtom** |  |
| 000045DC | 0008 | RecordHeader **- rh** |  |
| 000045E4 | 0004 | SlideIdRef **- slideIdRef** | 0x00000102 |
| 000045E8 | 0002 | SlideFlags **- slideFlags** |  |
| 000045EC | 021F | DrawingContainer **- drawing** |  |
| 0000480B | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 00004833 | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 67: NotesContainer record M child-record hierarchy

**notesAtom.slideIdRef:** 0x00000102 specifies a reference to the **slideId** field in the table titled "SlidePersistAtom record C child-record hierarchy" in section 3.5.2, the **SlidePersistAtom** for the third presentation slide. This **NotesContainer** record (section 2.5.6) represents the third notes slide as shown in figure titled "Notes slide 3" in section 3.1.

The child-record hierarchy of the **NotesPersistAtom** record D from the table titled "NotesListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006908 | 001C | **D**: NotesPersistAtom **- notesPersistAtom** |  |
| 00006908 | 0008 | RecordHeader **- rh** |  |
| 00006910 | 0004 | PersistIdRef **- persistIdRef** | 0x00000010 |
| 00006914 | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 00006914 | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 00006914 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 00006918 | 0004 | signed integer **- reserved3** | 0x00000000 |
| 0000691C | 0004 | NotesId **- notesId** | 0x00000104 |
| 00006920 | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 68: NotesPersistAtom record D child-record hierarchy

**persistIdRef:** 0x00000010 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00004873. This offset matches the offset for the **NotesContainer** (section 2.5.6) record N in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3.

The child-record hierarchy of the **NotesContainer** (section 2.5.6) record N from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00004873 | 02AF | **N**: NotesContainer |  |
| 00004873 | 0008 | RecordHeader **- rh** |  |
| 0000487B | 0010 | NotesAtom **- notesAtom** |  |
| 0000487B | 0008 | RecordHeader **- rh** |  |
| 00004883 | 0004 | SlideIdRef **- slideIdRef** | 0x00000101 |
| 00004887 | 0002 | SlideFlags **- slideFlags** |  |
| 0000488B | 022F | DrawingContainer **- drawing** |  |
| 00004ABA | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 00004AE2 | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 69: NotesContainer record N child-record hierarchy

**notesAtom.slideIdRef:** 0x00000101 specifies a reference to the **slideId** field in the table titled "SlidePersistAtom record A child-record hierarchy" in section 3.5.2, the **SlidePersistAtom** for the second presentation slide. This **NotesContainer** record (section 2.5.6) represents the second notes slide as shown in figure titled "Notes slide 2" in section 3.1.

The child-record hierarchy of the **NotesPersistAtom** record E from the table titled "NotesListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006924 | 001C | **E**: NotesPersistAtom **- notesPersistAtom** |  |
| 00006924 | 0008 | RecordHeader **- rh** |  |
| 0000692C | 0004 | PersistIdRef **- persistIdRef** | 0x00000011 |
| 00006930 | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 00006930 | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 00006930 | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 00006934 | 0004 | signed integer **- reserved3** | 0x00000000 |
| 00006938 | 0004 | NotesId **- notesId** | 0x00000105 |
| 0000693C | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 70: NotesPersistAtom record E child-record hierarchy

**persistIdRef:** 0x00000011 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00004B22. This offset matches the offset for the **NotesContainer** (section 2.5.6) record O in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3.

The child-record hierarchy of the **NotesContainer** (section 2.5.6) record O from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00004B22 | 0247 | **O**: NotesContainer |  |
| 00004B22 | 0008 | RecordHeader **- rh** |  |
| 00004B2A | 0010 | NotesAtom **- notesAtom** |  |
| 00004B2A | 0008 | RecordHeader **- rh** |  |
| 00004B32 | 0004 | SlideIdRef **- slideIdRef** | 0x00000100 |
| 00004B36 | 0002 | SlideFlags **- slideFlags** |  |
| 00004B3A | 01C7 | DrawingContainer **- drawing** |  |
| 00004D01 | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 00004D29 | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 71: NotesContainer record O child-record hierarchy

**notesAtom.slideIdRef:** 0x00000100 specifies a reference to the **slideId** field in the table titled "SlidePersistAtom record A child-record hierarchy" in section 3.5.2, the **SlidePersistAtom** for the first presentation slide. This **NotesContainer** record (section 2.5.6) represents the first notes slide as shown in figure titled "Notes slide 1" in section 3.1.

The child-record hierarchy of the **NotesPersistAtom** record F from the table titled "NotesListWithTextContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006940 | 001C | **F**: NotesPersistAtom **- notesPersistAtom** |  |
| 00006940 | 0008 | RecordHeader **- rh** |  |
| 00006948 | 0004 | PersistIdRef **- persistIdRef** | 0x00000014 |
| 0000694C | 2 bits | unsigned integer **- reserved1** | 0x0 |
| 0000694C | 1 bit | bit **- fNonOutlineData** | 0x0 |
| 0000694C | 29 bits | unsigned integer **- reserved2** | 0x00000000 |
| 00006950 | 0004 | signed integer **- reserved3** | 0x00000000 |
| 00006954 | 0004 | NotesId **- notesId** | 0x00000106 |
| 00006958 | 0004 | unsigned integer **- reserved4** | 0x00000000 |

Figure 72: NotesPersistAtom record F child-record hierarchy

**persistIdRef:** 0x00000014 specifies the value to look up in the persist object directory, shown in the last table in section 3.2, to find the persist object stream offset 0x00007FE3. This offset matches the offset for the **NotesContainer** (section 2.5.6) record V in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3.

The child-record hierarchy of the **NotesContainer** (section 2.5.6) record V from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007FE3 | 0289 | **V**: NotesContainer |  |
| 00007FE3 | 0008 | RecordHeader **- rh** |  |
| 00007FEB | 0010 | NotesAtom **- notesAtom** |  |
| 00007FEB | 0008 | RecordHeader **- rh** |  |
| 00007FF3 | 0004 | SlideIdRef **- slideIdRef** | 0x00000105 |
| 00007FF7 | 0002 | SlideFlags **- slideFlags** |  |
| 00007FFB | 0209 | DrawingContainer **- drawing** |  |
| 00008204 | 0028 | SlideSchemeColorSchemeAtom **- slideSchemeColorSchemeAtom** |  |
| 0000822C | 0040 | SlideProgTagsContainer **- slideProgTagsContainer** |  |

Figure 73: NotesContainer record V child-record hierarchy

**notesAtom.slideIdRef:** 0x00000105 specifies a reference to the **slideId** field in the table titled "SlidePersistAtom record F child-record hierarchy" in section 3.5.2, the **SlidePersistAtom** for the sixth presentation slide. This **NotesContainer** record (section 2.5.6) represents the sixth notes slide as shown in figure titled "Notes slide 6" in section 3.1.

## Programmable Tags

This file format allows for the storage of [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) at three levels—on the document itself, on each [**slide**](#gt_dd8a2def-ebde-4fc7-b420-6e837b2059cc), and on each [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e). While the primary purpose of programmable tags is to provide a mechanism for a third-party [**VBA**](#gt_bc3968c6-4bd2-40a2-8619-5cd7695b3e4f) [**add-in**](#gt_a3be101e-9d37-484a-a5e6-b70d559146c6) to persist opaque data in the file, they are also used as a way for a later version of PowerPoint to store new records in the file that will be safely ignored and preserved by an earlier version. The following sections show an example of this extension mechanism on the document and slide-levels.

### Document Programmable Tags

Document-level [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) are found inside the **DocProgTagsContainer** record (section [2.4.23.1](#Section_6965e9a7d4314707b789081a6a9c7b8f)) contained within the **DocInfoListContainer** record (section [2.4.4](#Section_f0fed863362f43a0ae7872ae15e56171)). The **DocInfoListContainer** record D from the table titled "DocumentContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00006199 | 04D7 | DocInfoListContainer **- docInfoList** |
| 00006199 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 000061A1 | 0024 | [NormalViewSetInfoContainer](#Section_5b7a13338de24c50a83838c389db3147) **- case of RT\_NormalViewSetInfo9** |
| 000061C5 | 00AF | [SlideViewInfoInstance](#Section_b2b53b7fd4c145a9948e3e0e7d168164) **- case of RT\_SlideViewInfo** |
| 00006274 | 0044 | [NotesTextViewInfoContainer](#Section_caacc34d988c4cbc99f7a4bdf808e723) **- case of RT\_NotesTextViewInfo9** |
| 000062B8 | 001C | [VBAInfoContainer](#Section_ca0b2c2bb1f8429890bd45296415f0a6) **- case of RT\_VbaInfo** |
| 000062D4 | 006F | SlideViewInfoInstance **- case of RT\_SlideViewInfo** |
| 00006343 | 0044 | [SorterViewInfoContainer](#Section_7184066996c54d7a9a9aeb5184c1626e) **- case of RT\_SorterViewInfo** |
| 00006387 | 0044 | [OutlineViewInfoContainer](#Section_39073741a8dd47bdb94f857a2850ff62) **- case of RT\_OutlineViewInfo** |
| 000063CB | 02A5 | **A**: DocProgTagsContainer **- case of RT\_ProgTags** |

Figure 74: DocInfoListContainer child-record hierarchy

The **DocProgTagsContainer**record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000063CB | 02A5 | DocProgTagsContainer **- case of RT\_ProgTags** |  |
| 000063CB | 0008 | RecordHeader **- rh** |  |
| 000063D3 | 0038 | **A**: [DocProgBinaryTagContainer](#Section_96d2ece1800548ebbbae0fd8f55f2f63) **- case of RT\_ProgBinaryTag** |  |
| 000063D3 | 0008 | RecordHeader **- rh** |  |
| 000063D3 | 4 bits | unsigned integer **- recVer** | 0xF |
| 000063D3 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000063D5 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x138A |
| 000063D7 | 0004 | unsigned integer **- recLen** | 0x00000030 |
| 000063DB | 0030 | **B**: [PP10DocBinaryTagExtension](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed) **- case of \_\_\_PPT10** |  |
| 0000640B | 0265 | **C**: DocProgBinaryTagContainer **- case of RT\_ProgBinaryTag** |  |
| 0000640B | 0008 | RecordHeader **- rh** |  |
| 0000640B | 4 bits | unsigned integer **- recVer** | 0xF |
| 0000640B | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 0000640D | 0002 | RecordType **- recType** | 0x138A |
| 0000640F | 0004 | unsigned integer **- recLen** | 0x0000025D |
| 00006413 | 025D | **D**: [PP9DocBinaryTagExtension](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0) **- case of \_\_\_PPT9** |  |

Figure 75: DocProgTagsContainer child-record hierarchy

The **DocProgTagsContainer** record shown in the previous table has two programmable tags, represented by records labeled A and C, both of which store binary data as specified by the 0x138Avalue for their **rh.recType** fields.

The PP2.4.23.6DocBinaryTagExtension record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000063DB | 0030 | **B**: PP10DocBinaryTagExtension **- case of \_\_\_PPT10** |  |
| 000063DB | 0008 | RecordHeader **- rh** |  |
| 000063DB | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000063DB | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000063DD | 0002 | RecordType **- recType** | 0x0FBA |
| 000063DF | 0004 | unsigned integer **- recLen** | 0x00000010 |
| 000063E3 | 0010 | [PrintableUnicodeString](#Section_7b3104aabe314358b31039775872b257) **- tagName** | \_\_\_PPT10 |
| 000063F3 | 0008 | RecordHeader **- rhData** |  |
| 000063F3 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 000063F3 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 000063F5 | 0002 | RecordType **- recType** | 0x138B |
| 000063F7 | 0004 | unsigned integer **- recLen** | 0x00000010 |
| 000063FB | 0010 | [GridSpacing10Atom](#Section_e40174dc118f46c38c6198f63d426f44) **- gridSpacingAtom** |  |

Figure 76: PP10DocBinaryTagExtension child-record hierarchy

Most records that have a **RecordHeader** structure (section 2.3.1) as the first field are either an [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) or a [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d). However, the PP2.4.23.6DocBinaryTagExtension record is not a single atom record, but rather a pair of atom records and has two **RecordHeader** structures identified by the **rh** and **rhData** fields.

**rh:** The value of the **rh.recLen** field is 0x00000010 and specifies the size of all subsequent fields until the next **RecordHeader** structure.

**tagName:** "\_\_\_PPT10" specifies that the binary tag data following the **rhData** field is as specified by the PP2.4.23.6DocBinaryTagExtension record.

**rhData:** The value of the **rhData.recVer** field is 0x0. Generally when the **recVer** field of a **RecordHeader** structure is not equal to 0xF, it indicates that the record that contains the **RecordHeader** structure is an atom record. However, in this context, **rhData** behaves more like a **RecordHeader** structure found as the first field of a container record, because following it are more atom records and container records, specifically a GridSpacing2.4.21.1Atom record. Accordingly, the value of the **rhData.recLen** field is 0x00000010 and specifies the size of all subsequent records to be included as part of the PP2.4.23.6DocBinaryTagExtension record.

The PP2.4.23.5DocBinaryTagExtensionrecord D from the table titled "DocProgTagsContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006413 | 025D | **D**: PP9DocBinaryTagExtension **- case of \_\_\_PPT9** |  |
| 00006413 | 0008 | RecordHeader **- rh** |  |
| 00006413 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006413 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006415 | 0002 | RecordType **- recType** | 0x0FBA |
| 00006417 | 0004 | unsigned integer **- recLen** | 0x0000000E |
| 0000641B | 000E | PrintableUnicodeString **- tagName** | \_\_\_PPT9 |
| 00006429 | 0008 | RecordHeader **- rhData** |  |
| 00006429 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006429 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 0000642B | 0002 | RecordType **- recType** | 0x138B |
| 0000642D | 0004 | unsigned integer **- recLen** | 0x0000023F |
| 00006431 | 01F1 | [BlipCollection9Container](#Section_8a93931e05c148be8824deb1c4489c14) **- blipCollectionContainer** |  |
| 00006622 | 0020 | [ExHyperlink9Container](#Section_c021ee00af9c4673bd69e3d49f3668df) **- exHyperlinkContainer** |  |
| 00006642 | 002E | [OutlineTextProps9Container](#Section_6eb16c7f6b6848dbace37347326b3a9d) **- outlineTextPropsContainer** |  |

Figure 77: PP9DocBinaryTagExtension child-record hierarchy

Most records that have a **RecordHeader** structure as the first field are either an atom record or a container record. However, the PP2.4.23.5DocBinaryTagExtension record is not a single atom record, but rather a pair of atom records and has two **RecordHeader** structures identified by the **rh** and **rhData** fields.

**rh:**  The value of the **rh.recLen** field is 0x0000000E and specifies the size of all subsequent fields until the next **RecordHeader** structure.

**tagName:** "\_\_\_PPT9" specifies that the binary tag data following the **rhData** is as specified by the PP2.4.23.5DocBinaryTagExtension record.

**rhData:** The value of the **rhData.recVer** field is 0x0. Generally when the **recVer** field of a **RecordHeader** structure is not equal to 0xF, it indicates that the record that contains the **RecordHeader** structure is an atom record. However, in this context, **rhData** behaves more like a **RecordHeader** structure found as the first field of a container record, because following it are more atom records and container records, specifically a **BlipCollection9Container** record (section 2.9.72), a ExHyperlink2.10.21Container record, and a OutlineTextProps2.9.60Container record. Accordingly, the value of the **rhData.recLen** field is 0x0000023F and specifies the size of all subsequent records to be included as part of the PP2.4.23.5DocBinaryTagExtension record.

### Slide Programmable Tags

Slide-level [**programmable tags**](#gt_dd094272-4965-44f3-ad71-d38cd0957cde) are found inside the **SlideContainer** record (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)). The [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) record A from the table titled "SlidePersistAtom record F child-record hierarchy" in section [3.5.2](#Section_cb3376a86bd64c62b579081eef2195b5) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000260C | 0875 | SlideProgTagsContainer **- slideProgTagsContainer** |  |
| 0000260C | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00002614 | 086D | **A**: [SlideProgBinaryTagContainer](#Section_e25eb8d2627e4104b293fc8ed82a098c) **- case of RT\_ProgBinaryTag** |  |
| 00002614 | 0008 | RecordHeader **- rh** |  |
| 00002614 | 4 bits | unsigned integer **- recVer** | 0xF |
| 00002614 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00002616 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x138A |
| 00002618 | 0004 | unsigned integer **- recLen** | 0x00000865 |
| 0000261C | 0865 | **B**: [PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17) **- case of \_\_\_PPT10** |  |
| 0000261C | 0008 | **C**: RecordHeader **- rh** |  |
| 0000261C | 4 bits | unsigned integer **- recVer** | 0x0 |
| 0000261C | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 0000261E | 0002 | RecordType **- recType** | 0x0FBA |
| 00002620 | 0004 | unsigned integer **- recLen** | 0x00000010 |
| 00002624 | 0010 | [PrintableUnicodeString](#Section_7b3104aabe314358b31039775872b257) **- tagName** | \_\_\_PPT10 |
| 00002634 | 0008 | RecordHeader **- rhData** |  |
| 00002634 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00002634 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00002636 | 0002 | RecordType **- recType** | 0x138B |
| 00002638 | 0004 | unsigned integer **- recLen** | 0x00000845 |
| 0000263C | 0010 | [SlideTime10Atom](#Section_d5e12b9941514c289d8652328381c974) **- slideTimeAtom** |  |
| 0000264C | 000C | [HashCode10Atom](#Section_bd2afac84f484071ba1a346546e1bee7) **- hashCodeAtom** |  |
| 00002658 | 07E9 | **D**: [ExtTimeNodeContainer](#Section_83d39c580d3046a4bffb188d792cb5a7) **- extTimeNodeContainer** |  |
| 00002E41 | 0040 | [BuildListContainer](#Section_48ffef8e5b8d4711a598cfa1f9fcb252) **- buildListContainer** |  |

Figure 78: SlideProgTagsContainer child-record hierarchy

The SlideProgTagsContainerrecord shown in the previous table has one programmable tag, represented by the record A, which stores binary data as specified by the 0x138Avalue for its **rh.recType** fields.

The contents of the programmable tag are shown by record B. Most records that have a **RecordHeader** structure (section 2.3.1) as the first field are either an [**atom record**](#gt_016695d0-c616-4235-b76e-e5fb66138f4a) or a [**container record**](#gt_2e3dbba7-731e-4e9a-803c-d5c40c11851d). However, the PP2.5.24SlideBinaryTagExtensionrecord B is not a single atom record, but rather a pair of atom records and has two **RecordHeader** structures identified by the **rh** and **rhData** fields.

**case of RT\_ProgBinaryTag.case of \_\_\_PPT10.rh:**  The value of the **rh.recLen** field of the **RecordHeader** structure C is 0x00000010 and specifies the size of all subsequent fields until the next **RecordHeader** structure.

**case of RT\_ProgBinaryTag.case of \_\_\_PPT10.tagName:** "\_\_\_PPT10" specifies that the binary tag data following the **rhData** field is as specified by the PP2.5.24SlideBinaryTagExtension record.

**case of RT\_ProgBinaryTag.case of \_\_\_PPT10.rhData:**  The value of the **rhData.recVer** field is 0x0. Generally when the **recVer** field of a **RecordHeader** structure is not equal to 0xF, it indicates that the record that contains the **RecordHeader** structure is an atom record. However, in this context, **rhData** behaves more like a **RecordHeader** structure found as the first field of a container record, because following it are more atom records and container records, specifically a SlideTime2.5.31Atomrecord, a HashCode2.8.3Atomrecord, an **ExtTimeNodeContainer** record (section 2.8.15), and a BuildListContainerrecord. Accordingly, the value of the **rhData.recLen** field is 0x00000845 and specifies the size of all subsequent records to be included as part of the PP2.5.24SlideBinaryTagExtension record.

## Animation

The following sections provide examples of text animation and shape animation. The animation in each example is synchronized with a timing tree that is a six-level tree of [**time nodes**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f). The first level is the root of the tree, which is stored inside the [PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17) record.

### Text Animation

This example explains the timing tree of the text animation used on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 2 as shown in figure titled "Presentation slide 2" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6). The animation displays one bullet item of paragraph every time the mouse is clicked. In total, three paragraphs that are not displayed at first are displayed, using animation.

The timing tree of the text animation is found inside the [PP2.5.24SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17) record. The **ExtTimeNodeContainer** (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) record D from the table titled "SlideProgTagsContainer child-record hierarchy" in section [3.6.2](#Section_669d0590c88242638aa15a9fb88fa053) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002658 | 07E9 | ExtTimeNodeContainer **- extTimeNodeContainer** |  |
| 00002658 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00002660 | 0028 | **A**: [TimeNodeAtom](#Section_a6b40fd7decd4d6e991a10394458c6a8) **- timeNodeAtom** |  |
| 00002688 | 0015 | [TimePropertyList4TimeNodeContainer](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2) **- timePropertyList** |  |
| 00002688 | 0008 | RecordHeader **- rh** |  |
| 00002690 | 000D | [TimeEffectNodeType](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) **- case of TL\_TPID\_EffectNodeType** |  |
| 00002690 | 0008 | RecordHeader **- rh** |  |
| 00002698 | 0001 | [TimeVariantTypeEnum](#Section_9900a3e8334a470583969b25de7958bc) **- type** | 0x01 |
| 00002699 | 0004 | signed integer **- effectNodeType** | 0x00000009 |
| 0000269D | 07A4 | **B**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 79: First-level ExtTimeNodeContainer child-record hierarchy

**timePropertyList.case of TL\_TPID\_EffectNodeType.effectNodeType:** 0x00000009 specifies that this [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) is the root of the timing tree.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002660 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00002660 | 0008 | RecordHeader **- rh** |  |
| 00002668 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 0000266C | 0004 | unsigned integer **- restart** | 0x00000003 |
| 00002670 | 0004 | [TimeNodeTypeEnum](#Section_8b2c01817e764bc79372285dcb67ae6f) **- type** | 0x00000000 |
| 00002674 | 0004 | unsigned integer **- fill** | 0x00000000 |
| 00002678 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 0000267C | 0001 | unsigned integer **- reserved3** | 0x00 |
| 00002680 | 0004 | signed integer **- duration** | 0xFFFFFFFF |
| 00002684 | 1 bit | bit **- fFillProperty** | 0x0 |
| 00002684 | 1 bit | bit **- fRestartProperty** | 0x1 |
| 00002684 | 1 bit | bit **- reserved4** | 0x0 |
| 00002684 | 1 bit | bit **- fGroupingTypeProperty** | 0x0 |
| 00002684 | 1 bit | bit **- fDurationProperty** | 0x1 |
| 00002684 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 80: TimeNodeAtom record A child-record hierarchy

**restart:** 0x00000003 specifies that this time node will never restart.

**type:** 0x00000000 specifies that this time node is a parallel time node, which allows all of its child nodes to start at the same time.

**fill:** 0x00000000 specifies that the animated properties are reset to their original values after the time node becomes inactive.

**duration:** 0xFFFFFFFF specifies that the duration of the time node is infinite, and that its actual duration is determined by the durations of its child nodes.

The child-record hierarchy of the **ExtTimeNodeContainer** record B from the first table titled "First-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000269D | 07A4 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 0000269D | 0008 | RecordHeader **- rh** |  |
| 000026A5 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000026CD | 0015 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000026CD | 0008 | RecordHeader **- rh** |  |
| 000026D5 | 000D | TimeEffectNodeType **- case of TL\_TPID\_EffectNodeType** |  |
| 000026D5 | 0008 | RecordHeader **- rh** |  |
| 000026DD | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000026DE | 0004 | signed integer **- effectNodeType** | 0x00000004 |
| 000026E2 | 001C | **B**: [TimeSequenceDataAtom](#Section_342b92a273df4b0b9878862f3532d570) **- timeSequenceDataAtom** |  |
| 000026FE | 0034 | **C**: [TimeConditionContainer](#Section_3b2ae2ff52fc405b8c3afd0702f490d3) **- timeCondition** |  |
| 00002732 | 0034 | **D**: TimeConditionContainer **- timeCondition** |  |
| 00002766 | 0249 | **E**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000029AF | 0249 | **F**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00002BF8 | 0249 | **G**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 81: Second-level ExtTimeNodeContainer child-record hierarchy

The **TimeConditionContainer** (section 2.8.75) record C specifies the [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704) of starting the next child time node, while the **TimeConditionContainer** record D specifies the time condition of starting the previous child time node.

The **ExtTimeNodeContainer** records E, F, and G are three child nodes of this time node. Each of them specifies the animation of one paragraph. Because these records are very similar, only the record E will be explained in this example.

**timePropertyList.case of TL\_TPID\_EffectNodeType.effectNodeType:** 0x00000004 specifies that this time node is the main sequential time node.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000026A5 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000026A5 | 0008 | RecordHeader **- rh** |  |
| 000026AD | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000026B1 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 000026B5 | 0004 | TimeNodeTypeEnum **- type** | 0x00000001 |
| 000026B9 | 0004 | unsigned integer **- fill** | 0x00000000 |
| 000026BD | 0004 | signed integer **- reserved2** | 0x00000000 |
| 000026C1 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 000026C5 | 0004 | signed integer **- duration** | 0xFFFFFFFF |
| 000026C9 | 1 bit | bit **- fFillProperty** | 0x0 |
| 000026C9 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 000026C9 | 1 bit | bit **- reserved4** | 0x0 |
| 000026C9 | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 000026C9 | 1 bit | bit **- fDurationProperty** | 0x1 |
| 000026C9 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 82: TimeNodeAtom record A child-record hierarchy in the second-level ExtTimeNodeContainer

**type:** 0x00000001 specifies that this time node is a sequential time node.

The child-record hierarchy of the TimeSequenceDataAtom record B from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section [3.7.2](#Section_13b03cf8e1934d7cbeceefee91ea40bd) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000026E2 | 001C | **B**: TimeSequenceDataAtom **- timeSequenceDataAtom** |  |
| 000026E2 | 0008 | RecordHeader **- rh** |  |
| 000026EA | 0004 | unsigned integer **- concurrency** | 0x00000001 |
| 000026EE | 0004 | unsigned integer **- nextAction** | 0x00000001 |
| 000026F2 | 0004 | unsigned integer **- previousAction** | 0x00000000 |
| 000026F6 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000026FA | 1 bit | bit **- fConcurrencyPropertyUsed** | 0x1 |
| 000026FA | 1 bit | bit **- fNextActionPropertyUsed** | 0x1 |
| 000026FA | 1 bit | bit **- fPreviousActionPropertyUsed** | 0x0 |
| 000026FA | 29 bits | unsigned integer **- reserved2** | 0x00000000 |

Figure 83: TimeSequenceDataAtom record B child-record hierarchy

**concurrency:** 0x00000001 specifies that the next child time node can be activated after the current child is activated and that the time condition in the **TimeConditionContainer** record C from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 are met.

**nextAction:** 0x00000001 specifies that the current child time node traverses forward to its natural end time before traversing to the next child.

**previousAction:** 0x00000000 specifies that no actions are performed before traversing back to the previous child time node.

The child-record hierarchy of the **TimeConditionContainer** record C from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000026FE | 0034 | **C**: TimeConditionContainer **- timeCondition** |  |
| 000026FE | 0008 | RecordHeader **- rh** |  |
| 00002706 | 0018 | [TimeConditionAtom](#Section_6d79388473f24b87b8b1a1b0e6310ad6) **- conditionAtom** |  |
| 00002706 | 0008 | RecordHeader **- rh** |  |
| 0000270E | 0004 | [TriggerObjectEnum](#Section_bdd8b7511e27473f92d8e8947888274a) **- triggerObject** | 0x00000001 |
| 00002712 | 0004 | unsigned integer **- triggerEvent** | 0x00000009 |
| 00002716 | 0004 | unsigned integer **- id** | 0x00000000 |
| 0000271A | 0004 | signed integer **- delay** | 0x00000000 |
| 0000271E | 0014 | [ClientVisualElementContainer](#Section_80b3266a1fe64140acef0483ac355c89) **- visualElement** |  |
| 0000271E | 0008 | RecordHeader **- rh** |  |
| 00002726 | 000C | [VisualElementAtom](#Section_7b47864505d44a2eb21ebbf183e3f73d) **- visualElementAtom** |  |
| 00002726 | 000C | [VisualPageAtom](#Section_4ecd8e2993c14393a31c80a8ccd529ce) **- case of RT\_VisualPageAtom** |  |
| 00002726 | 0008 | RecordHeader **- rh** |  |
| 0000272E | 0004 | [TimeVisualElementEnum](#Section_203c5f54666740468a63915100e25880) **- type** | 0x00000001 |

Figure 84: TimeConditionContainer record C child-record hierarchy in the second-level ExtTimeNodeContainer

The **TimeConditionContainer** specifies the time condition that triggers the next child time node.

**conditionAtom.triggerObject:** 0x00000001 specifies that the target that participates in the evaluation of time condition is an object as specified in the **timeCondition.visualElement** field.

**conditionAtom.triggerEvent:** 0x00000009 specifies that if the OnNext event occurs on the target, the time condition is true. The OnNext event can be triggered by a mouse click on the presentation slide.

**conditionAtom.id:** 0x00000000 specifies that the target is the presentation slide.

**conditionAtom.delay:** 0x00000000 specifies that there is no offset time applied to when the time condition becomes true.

**visualElement.visualElementAtom.case of RT\_VisualPageAtom.type:** 0x00000001 specifies that the target of the time condition is a presentation slide.

The child-record hierarchy of the **TimeConditionContainer** record D from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002732 | 0034 | **D**: TimeConditionContainer **- timeCondition** |  |
| 00002732 | 0008 | RecordHeader **- rh** |  |
| 0000273A | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 0000273A | 0008 | RecordHeader **- rh** |  |
| 00002742 | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000001 |
| 00002746 | 0004 | unsigned integer **- triggerEvent** | 0x0000000A |
| 0000274A | 0004 | unsigned integer **- id** | 0x00000000 |
| 0000274E | 0004 | signed integer **- delay** | 0x00000000 |
| 00002752 | 0014 | ClientVisualElementContainer **- visualElement** |  |
| 00002752 | 0008 | RecordHeader **- rh** |  |
| 0000275A | 000C | VisualElementAtom **- visualElementAtom** |  |
| 0000275A | 000C | VisualPageAtom **- case of RT\_VisualPageAtom** |  |
| 0000275A | 0008 | RecordHeader **- rh** |  |
| 00002762 | 0004 | TimeVisualElementEnum **- type** | 0x00000001 |

Figure 85: TimeConditionContainer record D child-record hierarchy in the second-level ExtTimeNodeContainer

The **TimeConditionContainer** specifies the time condition that triggers the previous child time node. The only difference between the **TimeConditionContainer** record C from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 and the **TimeConditionContainer** record D from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is the **timeCondition.conditionAtom.triggerEvent** field.

**conditionAtom.triggerEvent:** 0x0000000A specifies that if the OnPrev event occurs on the target, the time condition is true.

The child-record hierarchy of the **ExtTimeNodeContainer** record E from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00002766 | 0249 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 00002766 | 0008 | RecordHeader **- rh** |
| 0000276E | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |
| 00002796 | 0008 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |
| 00002796 | 0008 | RecordHeader **- rh** |
| 0000279E | 0020 | **C**: TimeConditionContainer **- timeCondition** |
| 000027BE | 01F1 | **D**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |

Figure 86: Third-level ExtTimeNodeContainer child-record hierarchy

The **TimePropertyList4TimeNodeContainer** (section 2.8.18) record B is an empty list.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000276E | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 0000276E | 0008 | RecordHeader **- rh** |  |
| 00002776 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 0000277A | 0004 | unsigned integer **- restart** | 0x00000000 |
| 0000277E | 0004 | TimeNodeTypeEnum **- type** | 0x00000000 |
| 00002782 | 0004 | unsigned integer **- fill** | 0x00000003 |
| 00002786 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 0000278A | 0001 | unsigned integer **- reserved3** | 0x00 |
| 0000278E | 0004 | signed integer **- duration** | 0x00000000 |
| 00002792 | 1 bit | bit **- fFillProperty** | 0x1 |
| 00002792 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 00002792 | 1 bit | bit **- reserved4** | 0x0 |
| 00002792 | 1 bit | bit **- fGroupingTypeProperty** | 0x0 |
| 00002792 | 1 bit | bit **- fDurationProperty** | 0x0 |
| 00002792 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 87: TimeNodeAtom record A child-record hierarchy in the third-level ExtTimeNodeContainer

**fill:** 0x00000003 specifies that the properties remain at their ending values while the parent time node at the second level is still running or holding.

**duration:** 0x00000000 specifies that the duration of the time node is not specified, and that its actual duration is determined by the latest end time of any of its child nodes.

The child-record hierarchy of the **TimeConditionContainer** record C from the first table titled "Third-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000279E | 0020 | **C**: TimeConditionContainer **- timeCondition** |  |
| 0000279E | 0008 | RecordHeader **- rh** |  |
| 000027A6 | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 000027A6 | 0008 | RecordHeader **- rh** |  |
| 000027AE | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 000027B2 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 000027B6 | 0004 | unsigned integer **- id** | 0x00000000 |
| 000027BA | 0004 | signed integer **- delay** | 0xFFFFFFFF |

Figure 88: TimeConditionContainer record C child-record hierarchy in the third-level ExtTimeNodeContainer

The value of the **conditionAtom.delay** field is 0xFFFFFFFF and specifies an infinite value, which implies that no delay is defined. The value of the **conditionAtom.triggerObject** field and the value of the **conditionAtom.triggerEvent** field are both 0x00000000, which specifies no condition for this time node, which implies that the evaluation of the time condition returns true.

The child-record hierarchy of the **ExtTimeNodeContainer** record D from the first table titled "Third-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000027BE | 01F1 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000027BE | 0008 | RecordHeader **- rh** |  |
| 000027C6 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000027EE | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000027EE | 0008 | RecordHeader **- rh** |  |
| 000027F6 | 0020 | **B**: TimeConditionContainer **- timeCondition** |  |
| 000027F6 | 0008 | RecordHeader **- rh** |  |
| 000027FE | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 000027FE | 0008 | RecordHeader **- rh** |  |
| 00002806 | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 0000280A | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 0000280E | 0004 | unsigned integer **- id** | 0x00000000 |
| 00002812 | 0004 | signed integer **- delay** | 0x00000000 |
| 00002816 | 0199 | **C**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 89: Fourth-level ExtTimeNodeContainer child-record hierarchy

The values of the **conditionAtom.triggerObject** field and the **conditionAtom.triggerEvent** field in the **TimeConditionContainer** record B are both 0x00000000, which specifies no condition for this time node and implies that the evaluation of the time condition returns true.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000027C6 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000027C6 | 0008 | RecordHeader **- rh** |  |
| 000027CE | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000027D2 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 000027D6 | 0004 | TimeNodeTypeEnum **- type** | 0x00000000 |
| 000027DA | 0004 | unsigned integer **- fill** | 0x00000003 |
| 000027DE | 0004 | signed integer **- reserved2** | 0x00000000 |
| 000027E2 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 000027E6 | 0004 | signed integer **- duration** | 0x00000000 |
| 000027EA | 1 bit | bit **- fFillProperty** | 0x1 |
| 000027EA | 1 bit | bit **- fRestartProperty** | 0x0 |
| 000027EA | 1 bit | bit **- reserved4** | 0x0 |
| 000027EA | 1 bit | bit **- fGroupingTypeProperty** | 0x0 |
| 000027EA | 1 bit | bit **- fDurationProperty** | 0x0 |
| 000027EA | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 90: TimeNodeAtom record A child-record hierarchy in the fourth-level ExtTimeNodeContainer

**fill:** 0x00000003 specifies that the properties remain at their ending values while the parent time node at the third level is still running or holding.

The child-record hierarchy of the **ExtTimeNodeContainer** record C from the table titled "Fourth-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.2 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002816 | 0199 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00002816 | 0008 | RecordHeader **- rh** |  |
| 0000281E | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00002846 | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 0000288F | 0020 | **C**: TimeConditionContainer **- timeCondition** |  |
| 0000288F | 0008 | RecordHeader **- rh** |  |
| 00002897 | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00002897 | 0008 | RecordHeader **- rh** |  |
| 0000289F | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 000028A3 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 000028A7 | 0004 | unsigned integer **- id** | 0x00000000 |
| 000028AB | 0004 | signed integer **- delay** | 0x00000000 |
| 000028AF | 0100 | **D**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 91: Fifth-level ExtTimeNodeContainer child-record hierarchy

This time node specifies the appear animation effect that makes the paragraph display during a [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

The values of the **conditionAtom.triggerObject** field and the **conditionAtom.triggerEvent** field in the **TimeConditionContainer** record C are both 0x00000000, which specifies no condition for this time node and implies that the evaluation of the time condition returns true.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000281E | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 0000281E | 0008 | RecordHeader **- rh** |  |
| 00002826 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 0000282A | 0004 | unsigned integer **- restart** | 0x00000000 |
| 0000282E | 0004 | TimeNodeTypeEnum **- type** | 0x00000000 |
| 00002832 | 0004 | unsigned integer **- fill** | 0x00000003 |
| 00002836 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 0000283A | 0001 | unsigned integer **- reserved3** | 0x00 |
| 0000283E | 0004 | signed integer **- duration** | 0x00000000 |
| 00002842 | 1 bit | bit **- fFillProperty** | 0x1 |
| 00002842 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 00002842 | 1 bit | bit **- reserved4** | 0x0 |
| 00002842 | 1 bit | bit **- fGroupingTypeProperty** | 0x0 |
| 00002842 | 1 bit | bit **- fDurationProperty** | 0x0 |
| 00002842 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 92: TimeNodeAtom record A child-record hierarchy in the fifth-level ExtTimeNodeContainer

**fill:** 0x00000003 specifies that the properties remain at their ending values while the parent time node at the fourth level is still running or holding.

The child-record hierarchy of the **TimePropertyList4TimeNodeContainer** record B from the table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002846 | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00002846 | 0008 | RecordHeader **- rh** |  |
| 0000284E | 000D | TimeEffectNodeType **- case of TL\_TPID\_EffectNodeType** |  |
| 0000284E | 0008 | RecordHeader **- rh** |  |
| 00002856 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00002857 | 0004 | signed integer **- effectNodeType** | 0x00000001 |
| 0000285B | 000D | [TimeEffectID](#Section_35c58b5655324d778c3353a82efb5a89) **- case of TL\_TPID\_EffectID** |  |
| 0000285B | 0008 | RecordHeader **- rh** |  |
| 00002863 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00002864 | 0004 | signed integer **- effectID** | 0x00000001 |
| 00002868 | 000D | [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) **- case of TL\_TPID\_EffectDir** |  |
| 00002868 | 0008 | RecordHeader **- rh** |  |
| 00002870 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00002871 | 0004 | signed integer **- intValue** | 0x00000000 |
| 00002875 | 000D | [TimeEffectType](#Section_989fce31f9b845a8a358361ca53d7a3d) **- case of TL\_TPID\_EffectType** |  |
| 00002875 | 0008 | RecordHeader **- rh** |  |
| 0000287D | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 0000287E | 0004 | signed integer **- effectType** | 0x00000001 |
| 00002882 | 000D | [TimeGroupID](#Section_da6bcd4790ea44a692a0aeca9c2864e4) **- case of TL\_TPID\_GroupID** |  |
| 00002882 | 0008 | RecordHeader **- rh** |  |
| 0000288A | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 0000288B | 0004 | signed integer **- groupID** | 0x00000000 |

Figure 93: TimePropertyList4TimeNodeContainer record B child-record hierarchy in the fifth-level ExtTimeNodeContainer

**case of TL\_TPID\_EffectNodeType.effectNodeType:** 0x00000001 specifies that this time node is for a click effect.

**case of TL\_TPID\_EffectID.effectID:** 0x00000001 specifies the identifier of the animation effect applied to the paragraphs, which specifies the appear animation effect.

**case of TL\_TPID\_EffectDir.intValue:** 0x00000000 specifies no direction for the animation effect.

**case of TL\_TPID\_EffectType.effectType:** 0x00000001 specifies that the animation effect is an entrance effect.

**case of TL\_TPID\_GroupID.groupID:** 0x00000000 specifies the [**build identifier**](#gt_0748643f-8a66-42ea-959a-3acd533eedc5) of the animation effect.

The child-record hierarchy of the **ExtTimeNodeContainer** record D from the table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table. This is the only animation behavior of the appear animation effect.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000028AF | 0100 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000028AF | 0008 | RecordHeader **- rh** |  |
| 000028B7 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000028DF | 0008 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000028DF | 0008 | RecordHeader **- rh** |  |
| 000028E7 | 00A8 | **C**: [TimeSetBehaviorContainer](#Section_5428095fe4c443d0ad36b8b240e1338b) **- timeSetBehavior** |  |
| 0000298F | 0020 | **D**: TimeConditionContainer **- timeCondition** |  |
| 0000298F | 0008 | RecordHeader **- rh** |  |
| 00002997 | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00002997 | 0008 | RecordHeader **- rh** |  |
| 0000299F | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 000029A3 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 000029A7 | 0004 | unsigned integer **- id** | 0x00000000 |
| 000029AB | 0004 | signed integer **- delay** | 0x00000000 |

Figure 94: Sixth-level ExtTimeNodeContainer child-record hierarchy

The values of the **conditionAtom.triggerObject** field and the **conditionAtom.triggerEvent** field in the **TimeConditionContainer** record D are both 0x00000000, which specifies no condition for this time node and implies that the evaluation of the time condition returns true.

The **TimePropertyList4TimeNodeContainer** record B is an empty list.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000028B7 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000028B7 | 0008 | RecordHeader **- rh** |  |
| 000028BF | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000028C3 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 000028C7 | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 000028CB | 0004 | unsigned integer **- fill** | 0x00000003 |
| 000028CF | 0004 | signed integer **- reserved2** | 0x00000000 |
| 000028D3 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 000028D7 | 0004 | signed integer **- duration** | 0x00000001 |
| 000028DB | 1 bit | bit **- fFillProperty** | 0x1 |
| 000028DB | 1 bit | bit **- fRestartProperty** | 0x0 |
| 000028DB | 1 bit | bit **- reserved4** | 0x0 |
| 000028DB | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 000028DB | 1 bit | bit **- fDurationProperty** | 0x1 |
| 000028DB | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 95: TimeNodeAtom record A child-record hierarchy in the sixth-level ExtTimeNodeContainer

**type:** 0x00000003 specifies that this time node is a behavior time node that contains a behavior.

**fill:** 0x00000003 specifies that the properties remain at their ending values while the parent time node at the fourth level is still running or holding.

**duration:** 0x00000001 specifies that the duration of this time node is 0.001 seconds.

The child-record hierarchy of the **TimeSetBehaviorContainer** (section 2.8.69) record C from the table titled "Sixth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000028E7 | 00A8 | TimeSetBehaviorContainer **- timeSetBehavior** |  |
| 000028E7 | 0008 | RecordHeader **- rh** |  |
| 000028EF | 0010 | [TimeSetBehaviorAtom](#Section_f8876381cf7f4d2b9888965e2929c9dc) **- setBehaviorAtom** |  |
| 000028EF | 0008 | RecordHeader **- rh** |  |
| 000028EF | 1 bit | bit **- fToPropertyUsed** | 0x1 |
| 000028EF | 1 bit | bit **- fValueTypePropertyUsed** | 0x0 |
| 000028EF | 30 bits | unsigned integer **- reserved** | 0x00000000 |
| 000028FB | 0004 | [TimeAnimateBehaviorValueTypeEnum](#Section_2817d0100a0347dd82993610e25a4645) **- valueType** | 0x00000001 |
| 000028FF | 0019 | [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) **- varTo** |  |
| 000028FF | 0008 | RecordHeader **- rh** |  |
| 00002907 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00002908 | 0010 | array of bytes **- stringValue** | visible |
| 00002918 | 0077 | **A**: [TimeBehaviorContainer](#Section_8d75cc5b6f804b2e980ba521e2691e54) **- behavior** |  |

Figure 96: Child-record hierarchy of TimeSetBehaviorContainer in the sixth-level ExtTimeNodeContainer

This set behavior assigns a specified value to the property as specified in the **timeSetBehavior.varTo.stringValue** field.

**setBehaviorAtom.valueType:** 0x00000001 specifies that the type of the property value is a number.

**varTo.stringValue:** "visible" specifies the preset value that will be assigned to the property that controls the visibility of the target object. After this value is set, the target object appears in the slide show.

The child-record hierarchy of the **TimeBehaviorContainer** (section 2.8.34) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002918 | 0077 | TimeBehaviorContainer **- behavior** |  |
| 00002918 | 0008 | RecordHeader **- rh** |  |
| 00002920 | 0018 | **A**: [TimeBehaviorAtom](#Section_9f996c4a3780415c9a6771d323788f95) **- behaviorAtom** |  |
| 00002938 | 0033 | **B**: [TimeStringListContainer](#Section_99109d34b306454e8e19da1f090cedd9) **- stringList** |  |
| 00002938 | 0008 | RecordHeader **- rh** |  |
| 00002940 | 002B | TimeVariantString **- string** |  |
| 00002940 | 0008 | RecordHeader **- rh** |  |
| 00002948 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00002949 | 0022 | array of bytes **- stringValue** | style.visibility |
| 0000296B | 0024 | **C**: ClientVisualElementContainer **- clientVisualElement** |  |
| 0000296B | 0008 | RecordHeader **- rh** |  |
| 00002973 | 001C | VisualElementAtom **- visualElementAtom** |  |
| 00002973 | 001C | [VisualShapeOrSoundAtom](#Section_980f64aba892406bb4696299033ade3c) **- case of RT\_VisualShapeAtom** |  |
| 00002973 | 001C | [VisualShapeAtom](#Section_a274411d0faa4993b202a7510a93c881) **- case of TL\_ET\_ShapeType** |  |
| 00002973 | 001C | [VisualShapeGeneralAtom](#Section_e3f4be5088fd43fdb68f82f2743e92ea) **- default\_case** |  |
| 00002973 | 0008 | RecordHeader **- rh** |  |
| 0000297B | 0004 | TimeVisualElementEnum **- type** | 0x00000002 |
| 0000297F | 0004 | [ElementTypeEnum](#Section_9d254b2a9ff04b99b03626152848bf69) **- refType** | 0x00000001 |
| 00002983 | 0004 | unsigned integer **- shapeIdRef** | 0x00000C03 |
| 00002987 | 0004 | signed integer **- data1** | 0x00000000 |
| 0000298B | 0004 | signed integer **- data2** | 0x0000000C |

Figure 97: Child-record hierarchy of TimeBehaviorContainer

**stringList.string.stringValue:** "style.visibility" specifies the property to which a value is assigned. This property controls the visibility of the target object.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.type:** 0x00000002 specifies that the animation is applied to a specified range of text in the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e).

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.refType:** 0x00000001 specifies that the animation target is a part of the shape that contains the three paragraphs.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.shapeIdRef:** 0x00000C03 specifies the [**shape identifier**](#gt_10fbabb4-d33a-4b89-bedd-17cd448fba2b) of the shape that contains the three paragraphs.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.data1:** 0x00000000 specifies the character index of the beginning of the paragraph to be animated.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.data2:** 0x0000000C specifies the character index of the end of the paragraph to be animated.

The child-record hierarchy of the TimeBehaviorAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00002920 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 00002920 | 0008 | RecordHeader **- rh** |  |
| 00002920 | 1 bit | bit **- fAdditivePropertyUsed** | 0x0 |
| 00002920 | 1 bit | bit **- reserved1** | 0x0 |
| 00002920 | 1 bit | bit **- fAttributeNamesPropertyUsed** | 0x1 |
| 00002920 | 1 bit | bit **- reserved2** | 0x0 |
| 00002920 | 28 bits | unsigned integer **- reserved3** | 0x0000000 |
| 0000292C | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 00002930 | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 00002934 | 0004 | signed integer **- behaviorTransform** | 0x00000000 |

Figure 98: TimeBehaviorAtom record A child-record hierarchy

**behaviorAdditive:** 0x00000000 specifies that the animated value replaces the original value of the property to be animated.

**behaviorAccumulate:** 0x00000000 specifies that no accumulation between repeating animations occurs.

**behaviorTransform:** 0x00000000 specifies that the animation animates a property of the target object.

### Shape Animation

This example explains the timing tree of the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) animations for the green square on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 3 as shown in figure titled "Presentation slide 3" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6). The effects include a fly-in animation effect, a spin animation effect, and a sink-down animation effect. These three animation effects are triggered one after the other by successive mouse clicks.

The timing tree of the shape animation is found inside the [PP2.5.24SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17) record. For example, the **ExtTimeNodeContainer** (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)) record D from the table titled "SlideProgTagsContainer child-record hierarchy" in section [3.6.2](#Section_669d0590c88242638aa15a9fb88fa053) is the root of the timing tree for presentation slide 2. The **ExtTimeNodeContainer** record shown expanded in the following table is similarly the root of the timing tree for presentation slide 3.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006C0E | 0E38 | ExtTimeNodeContainer **- extTimeNodeContainer** |  |
| 00006C0E | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00006C16 | 0028 | **A**: [TimeNodeAtom](#Section_a6b40fd7decd4d6e991a10394458c6a8) **- timeNodeAtom** |  |
| 00006C3E | 0015 | [TimePropertyList4TimeNodeContainer](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2) **- timePropertyList** |  |
| 00006C3E | 0008 | RecordHeader **- rh** |  |
| 00006C46 | 000D | [TimeVariant4TimeNode](#Section_1cbe764818fe4205b2c738163c85daf7) **- rec** |  |
| 00006C46 | 000D | [TimeEffectNodeType](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) **- case of TL\_TPID\_EffectNodeType** |  |
| 00006C46 | 000D | [TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) **- effectNodeType0** |  |
| 00006C46 | 0008 | RecordHeader **- rh** |  |
| 00006C4E | 0001 | [TimeVariantTypeEnum](#Section_9900a3e8334a470583969b25de7958bc) **- type** | 0x01 |
| 00006C4F | 0004 | signed integer **- effectNodeType** | 0x00000009 |
| 00006C53 | 0DF3 | **B**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 99: First-level ExtTimeNodeContainer child-record hierarchy

**timePropertyList.rec.case of TL\_TPID\_EffectNodeType.effectNodeType0.effectNodeType:** 0x00000009 specifies that this [**time node**](#gt_9119779c-a57f-45b7-a9b2-1ceab434560f) is the root of the timing tree.

The TimeNodeAtom record A is similar to the TimeNodeAtom record, as specified in the table titled "TimeNodeAtom record A child-record hierarchy" in section [3.7.1](#Section_d8b47ac92a8e4c8b88b49f58d893bdad).

The child-record hierarchy of the **ExtTimeNodeContainer** record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006C53 | 0DF3 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006C53 | 0008 | RecordHeader **- rh** |  |
| 00006C5B | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00006C83 | 0015 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006C83 | 0008 | RecordHeader **- rh** |  |
| 00006C8B | 000D | TimeEffectNodeType **- case of TL\_TPID\_EffectNodeType** |  |
| 00006C8B | 0008 | RecordHeader **- rh** |  |
| 00006C93 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00006C94 | 0004 | signed integer **- effectNodeType** | 0x00000004 |
| 00006C98 | 001C | **B**: [TimeSequenceDataAtom](#Section_342b92a273df4b0b9878862f3532d570) **- timeSequenceDataAtom** |  |
| 00006CB4 | 0034 | **C**: [TimeConditionContainer](#Section_3b2ae2ff52fc405b8c3afd0702f490d3) **- timeCondition** |  |
| 00006CE8 | 0034 | **D**: TimeConditionContainer **- timeCondition** |  |
| 00006D1C | 0483 | **E**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 0000719F | 022E | **F**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000073CD | 0679 | **G**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 100: Second-level ExtTimeNodeContainer child-record hierarchy

As a second-level time node, the **ExtTimeNodeContainer** record shown in the preceding table serves a similar purpose in the timing tree as does the **ExtTimeNodeContainer** record shown in the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in this section. Consequently many of the child-records are likewise similar. The TimeNodeAtom record A specifies the timing attributes of this time node and is similar to the TimeNodeAtom record, as specified in the table titled "TimeNodeAtom record A child-record hierarchy in the second-level ExtTimeNodeContainer" in section 3.7.1. The TimeSequenceDataAtom record B specifies how to activate the child time nodes E, F, and G, sequentially and is similar to the TimeSequenceDataAtom record, as specified in the table titled "TimeSequenceDataAtom record B child-record hierarchy" in section 3.7.1. The **TimeConditionContainer** (section 2.8.75) record C specifies the [**time condition**](#gt_c214cc6f-a16b-4008-ad09-71ea9e3f1704) to activate the next child time node and is similar to the **TimeConditionContainer** record, as specified in the table titled "TimeConditionContainer record C child-record hierarchy in the second-level ExtTimeNodeContainer" in section 3.7.1. The **TimeConditionContainer** record D specifies the time condition required to activate the previous child time node and is similar to the **TimeConditionContainer** record as specified in the table titled "TimeConditionContainer record D child-record hierarchy in the second-level ExtTimeNodeContainer" in section 3.7.1.

**timePropertyList.case of TL\_TPID\_EffectNodeType.effectNodeType:** 0x00000004 specifies that this time node is the main sequential time node.

The child-record hierarchy of the **ExtTimeNodeContainer** record E from the previous table is shown expanded in the following table. This time node contains the fly-in animation.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006D1C | 0483 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006D1C | 0008 | RecordHeader **- rh** |  |
| 00006D24 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00006D4C | 0008 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006D4C | 0008 | RecordHeader **- rh** |  |
| 00006D54 | 0020 | **C**: TimeConditionContainer **- timeCondition** |  |
| 00006D54 | 0008 | RecordHeader **- rh** |  |
| 00006D5C | 0018 | [TimeConditionAtom](#Section_6d79388473f24b87b8b1a1b0e6310ad6) **- conditionAtom** |  |
| 00006D5C | 0008 | RecordHeader **- rh** |  |
| 00006D64 | 0004 | [TriggerObjectEnum](#Section_bdd8b7511e27473f92d8e8947888274a) **- triggerObject** | 0x00000000 |
| 00006D68 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 00006D6C | 0004 | unsigned integer **- id** | 0x00000000 |
| 00006D70 | 0004 | signed integer **- delay** | 0xFFFFFFFF |
| 00006D74 | 042B | **D**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 101: Third-level ExtTimeNodeContainer child-record hierarchy

The TimeNodeAtom record A specifies the timing attributes of this time node and is similar to the TimeNodeAtom record, as specified in the table titled "TimeNodeAtom record A child-record hierarchy in the third-level ExtTimeNodeContainer" in section 3.7.1. The **TimePropertyList4TimeNodeContainer** (section 2.8.18) record B is an empty list.

The value of the **conditionAtom.delay** field in the **TimeConditionContainer** record C is 0xFFFFFFFF, which specifies an infinite value and implies that no delay is defined. The value of the **conditionAtom.triggerObject** field and the value of the **conditionAtom.triggerEvent** field in the **TimeConditionContainer** record C are both 0x00000000, which specifies no time condition for this time node and implies that the evaluation of the time condition returns true.

The child-record hierarchy of the **ExtTimeNodeContainer** record D from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006D74 | 042B | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006D74 | 0008 | RecordHeader **- rh** |  |
| 00006D7C | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00006DA4 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006DA4 | 0008 | RecordHeader **- rh** |  |
| 00006DAC | 0020 | TimeConditionContainer **- timeCondition** |  |
| 00006DAC | 0008 | RecordHeader **- rh** |  |
| 00006DB4 | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00006DB4 | 0008 | RecordHeader **- rh** |  |
| 00006DBC | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 00006DC0 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 00006DC4 | 0004 | unsigned integer **- id** | 0x00000000 |
| 00006DC8 | 0004 | signed integer **- delay** | 0x00000000 |
| 00006DCC | 03D3 | **B**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 102: Fourth-level ExtTimeNodeContainer child-record hierarchy

The TimeNodeAtom record A is similar to the TimeNodeAtom record A, as specified in the table titled "TimeNodeAtom record A child-record hierarchy in the fourth-level ExtTimeNodeContainer" in section 3.7.1.

The child-record hierarchy of the **ExtTimeNodeContainer** record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006DCC | 03D3 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006DCC | 0008 | RecordHeader **- rh** |  |
| 00006DD4 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00006DFC | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006E45 | 0020 | TimeConditionContainer **- timeCondition** |  |
| 00006E45 | 0008 | RecordHeader **- rh** |  |
| 00006E4D | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00006E4D | 0008 | RecordHeader **- rh** |  |
| 00006E55 | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 00006E59 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 00006E5D | 0004 | unsigned integer **- id** | 0x00000000 |
| 00006E61 | 0004 | signed integer **- delay** | 0x00000000 |
| 00006E65 | 0100 | **C**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006F65 | 0119 | **D**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 0000707E | 0121 | **E**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 103: Fifth-level ExtTimeNodeContainer child-record hierarchy

The **ExtTimeNodeContainer** record C contains a set behavior, while the **ExtTimeNodeContainer** records D and E contain two generic animations. These three animation behaviors form the fly-in animation that is triggered by the first mouse click.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006DD4 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00006DD4 | 0008 | RecordHeader **- rh** |  |
| 00006DDC | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 00006DE0 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 00006DE4 | 0004 | [TimeNodeTypeEnum](#Section_8b2c01817e764bc79372285dcb67ae6f) **- type** | 0x00000000 |
| 00006DE8 | 0004 | unsigned integer **- fill** | 0x00000003 |
| 00006DEC | 0004 | signed integer **- reserved2** | 0x00000000 |
| 00006DF0 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 00006DF4 | 0004 | signed integer **- duration** | 0x00000000 |
| 00006DF8 | 1 bit | bit **- fFillProperty** | 0x1 |
| 00006DF8 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 00006DF8 | 1 bit | bit **- reserved4** | 0x0 |
| 00006DF8 | 1 bit | bit **- fGroupingTypeProperty** | 0x0 |
| 00006DF8 | 1 bit | bit **- fDurationProperty** | 0x0 |
| 00006DF8 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 104: TimeNodeAtom record A child-record hierarchy in the fifth-level ExtTimeNodeContainer

**fill:** 0x00000003 specifies that the properties remain at their ending values while the parent time node at the fourth level is still running or holding.

**duration:** 0x00000000 specifies that the duration of this time node depends on its child nodes.

The child-record hierarchy of the **TimePropertyList2.8.18TimeNodeContainer** record B from the first table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006DFC | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006DFC | 0008 | RecordHeader **- rh** |  |
| 00006E04 | 000D | TimeEffectNodeType **- case of TL\_TPID\_EffectNodeType** |  |
| 00006E04 | 0008 | RecordHeader **- rh** |  |
| 00006E0C | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00006E0D | 0004 | signed integer **- effectNodeType** | 0x00000001 |
| 00006E11 | 000D | [TimeEffectID](#Section_35c58b5655324d778c3353a82efb5a89) **- case of TL\_TPID\_EffectID** |  |
| 00006E11 | 0008 | RecordHeader **- rh** |  |
| 00006E19 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00006E1A | 0004 | signed integer **- effectID** | 0x00000002 |
| 00006E1E | 000D | TimeVariantInt **- case of TL\_TPID\_EffectDir** |  |
| 00006E26 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00006E27 | 0004 | signed integer **- intValue** | 0x00000004 |
| 00006E2B | 000D | [TimeEffectType](#Section_989fce31f9b845a8a358361ca53d7a3d) **- case of TL\_TPID\_EffectType** |  |
| 00006E2B | 0008 | RecordHeader **- rh** |  |
| 00006E33 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00006E34 | 0004 | signed integer **- effectType** | 0x00000001 |
| 00006E38 | 000D | [TimeGroupID](#Section_da6bcd4790ea44a692a0aeca9c2864e4) **- case of TL\_TPID\_GroupID** |  |
| 00006E38 | 0008 | RecordHeader **- rh** |  |
| 00006E40 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00006E41 | 0004 | signed integer **- groupID** | 0x00000001 |

Figure 105: Child-record hierarchy of TimePropertyList4TimeNodeContainer in the fifth-level ExtTimeNodeContainer

**case of TL\_TPID\_EffectNodeType.effectNodeType:** 0x00000001 specifies that this time node is for a click effect.

**case of TL\_TPID\_EffectID.effectID:** 0x00000002 specifies the identifier of the fly-in animation effect.

**case of TL\_TPID\_EffectDir.intValue:** 0x00000004 specifies that the direction of the fly-in animation is from bottom up.

**case of TL\_TPID\_EffectType.effectType:** 0x00000001 specifies that the fly-in animation is an entrance effect.

**case of TL\_TPID\_GroupID.groupID:** 0x00000001 specifies the [**build identifier**](#gt_0748643f-8a66-42ea-959a-3acd533eedc5) of the fly-in animation.

The child-record hierarchy of the **ExtTimeNodeContainer** record C from the first table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006E65 | 0100 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006E65 | 0008 | RecordHeader **- rh** |  |
| 00006E6D | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00006E95 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006E95 | 0008 | RecordHeader **- rh** |  |
| 00006E9D | 00A8 | **B**: [TimeSetBehaviorContainer](#Section_5428095fe4c443d0ad36b8b240e1338b) **- timeSetBehavior** |  |
| 00006F45 | 0020 | TimeConditionContainer **- timeCondition** |  |
| 00006F45 | 0008 | RecordHeader **- rh** |  |
| 00006F4D | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00006F4D | 0008 | RecordHeader **- rh** |  |
| 00006F55 | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 00006F59 | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 00006F5D | 0004 | unsigned integer **- id** | 0x00000000 |
| 00006F61 | 0004 | signed integer **- delay** | 0x00000000 |

Figure 106: The first sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a set behavior that sets the "style.visibility" property of the shape to "visible", to make the shape visible in the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b). It is very similar to the time node specified in the table titled "Sixth-level ExtTimeNodeContainer child-record hierarchy" in section 3.7.1. The TimeNodeAtom record A is similar to the TimeNodeAtom record specified in the table titled "TimeNodeAtom record A child-record hierarchy in the sixth-level ExtTimeNodeContainer" in section 3.7.1, while the **TimeSetBehaviorContainer** (section 2.8.69) record B is similar to the **TimeSetBehaviorContainer** specified in the table titled "Child-record hierarchy of TimeSetBehaviorContainer in the sixth-level ExtTimeNodeContainer" in section 3.7.1. The **timePropertyList** field is an empty list, and the **timeCondition** field specifies that the evaluation of the time condition returns true.

The child-record hierarchy of the **ExtTimeNodeContainer** record D from the first table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006F65 | 0119 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00006F65 | 0008 | RecordHeader **- rh** |  |
| 00006F6D | 0028 | TimeNodeAtom **- timeNodeAtom** |  |
| 00006F6D | 0008 | RecordHeader **- rh** |  |
| 00006F75 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 00006F79 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 00006F7D | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 00006F81 | 0004 | unsigned integer **- fill** | 0x00000003 |
| 00006F85 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 00006F89 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 00006F8D | 0004 | signed integer **- duration** | 0x000001F4 |
| 00006F91 | 1 bit | bit **- fFillProperty** | 0x1 |
| 00006F91 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 00006F91 | 1 bit | bit **- reserved4** | 0x0 |
| 00006F91 | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 00006F91 | 1 bit | bit **- fDurationProperty** | 0x1 |
| 00006F91 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |
| 00006F95 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00006F95 | 0008 | RecordHeader **- rh** |  |
| 00006F9D | 00E1 | **A**: [TimeAnimateBehaviorContainer](#Section_bc65cd1c14a74c0dbc2d192bab64a713) **- timeAnimateBehavior** |  |

Figure 107: The second sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a generic behavior that animates the position of the shape in the horizontal axis.

**timeNodeAtom.type:** 0x00000003 specifies that this time node is a behavior time node that contains a behavior.

**timeNodeAtom.fill:** 0x00000003 specifies that the properties remain at their ending values while the parent time node at the fourth level is still running or holding.

**timeNodeAtom.duration:** 0x000001F4 specifies that the duration of this time node is 0.5 seconds.

The child-record hierarchy of the **TimeAnimateBehaviorContainer** (section 2.8.29) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006F9D | 00E1 | TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 00006F9D | 0008 | RecordHeader **- rh** |  |
| 00006FA5 | 0014 | [TimeAnimateBehaviorAtom](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe) **- animateBehaviorAtom** |  |
| 00006FA5 | 0008 | RecordHeader **- rh** |  |
| 00006FAD | 0004 | unsigned integer **- calcMode** | 0x00000001 |
| 00006FB1 | 1 bit | bit **- fByPropertyUsed** | 0x0 |
| 00006FB1 | 1 bit | bit **- fFromPropertyUsed** | 0x0 |
| 00006FB1 | 1 bit | bit **- fToPropertyUsed** | 0x0 |
| 00006FB1 | 1 bit | bit **- fCalcModePropertyUsed** | 0x1 |
| 00006FB1 | 1 bit | bit **- fAnimationValuesPropertyUsed** | 0x1 |
| 00006FB1 | 1 bit | bit **- fValueTypePropertyUsed** | 0x1 |
| 00006FB1 | 26 bits | unsigned integer **- reserved** | 0x0000000 |
| 00006FB5 | 0004 | [TimeAnimateBehaviorValueTypeEnum](#Section_2817d0100a0347dd82993610e25a4645) **- valueType** | 0x00000001 |
| 00006FB9 | 0064 | **A**: [TimeAnimationValueListContainer](#Section_9177feba1a8140b8950dd1de63ae8ee7) **- animateValueList** |  |
| 0000701D | 0061 | **B**: [TimeBehaviorContainer](#Section_8d75cc5b6f804b2e980ba521e2691e54) **- behavior** |  |

Figure 108: TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

**animateBehaviorAtom.calcMode:** 0x00000001 specifies that the animated value of the property is calculated by linear interpolation.

**animateBehaviorAtom.valueType:** 0x00000001 specifies that the property value is a number.

The child-record hierarchy of the **TimeAnimationValueListContainer** (section 2.8.31) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006FB9 | 0064 | TimeAnimationValueListContainer **- animateValueList** |  |
| 00006FB9 | 0008 | RecordHeader **- rh** |  |
| 00006FC1 | 002E | **A**: [TimeAnimationValueListEntry](#Section_be583d6811d743c2a3008ef2ffac7841) **- timeAnimValueListEntry[0]** |  |
| 00006FC1 | 000C | [TimeAnimationValueAtom](#Section_65496e4f4e9743beb68e4f1355f41aa3) **- timeAnimationValueAtom** |  |
| 00006FC1 | 0008 | RecordHeader **- rh** |  |
| 00006FC9 | 0004 | signed integer **- time** | 0x00000000 |
| 00006FCD | 0017 | [TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) **- case of TL\_TVT\_String** |  |
| 00006FCD | 0008 | RecordHeader **- rh** |  |
| 00006FD5 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00006FD6 | 000E | array of bytes **- stringValue** | #ppt\_x |
| 00006FE4 | 000B | TimeVariantString **- varFormula** |  |
| 00006FE4 | 0008 | RecordHeader **- rh** |  |
| 00006FEC | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00006FED | 0002 | array of bytes **- stringValue** |  |
| 00006FEF | 002E | **B**: TimeAnimationValueListEntry **- timeAnimValueListEntry[1]** |  |
| 00006FEF | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 00006FEF | 0008 | RecordHeader **- rh** |  |
| 00006FF7 | 0004 | signed integer **- time** | 0x000003E8 |
| 00006FFB | 0017 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 00006FFB | 0008 | RecordHeader **- rh** |  |
| 00007003 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007004 | 000E | array of bytes **- stringValue** | #ppt\_x |
| 00007012 | 000B | TimeVariantString **- varFormula** |  |
| 00007012 | 0008 | RecordHeader **- rh** |  |
| 0000701A | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000701B | 0002 | array of bytes **- stringValue** |  |

Figure 109: TimeAnimationValueListContainer child-record hierarchy

The **TimeAnimationValueListContainer** record specifies two key points of the animation. The TimeAnimationValueListEntry record A specifies the beginning point, while the TimeAnimationValueListEntry record B specifies the endpoint.

**timeAnimValueListEntry[0].timeAnimationValueAtom.time:** 0x00000000 specifies that the first key point is the starting point of the animation.

**timeAnimValueListEntry[0].case of TL\_TVT\_String.stringValue:** "#ppt\_x" specifies the formula that is used to calculate the property value at time 0x00000000. The value of this formula is the original value of the position of the shape on the horizontal axis.

**timeAnimValueListEntry[1].timeAnimationValueAtom.time:** 0x000003E8 specifies that the second key point is the endpoint of the animation.

**timeAnimValueListEntry[1].case of TL\_TVT\_String.stringValue:** "#ppt\_x" specifies the formula that is used to calculate the property value at time 0x000003E8. The value of this formula is the original value of the position of the shape on the horizontal axis.

Because the values at the two key points are identical and equal to the original value of the position on the horizontal axis, the shape does not change its position on the horizontal axis during the fly-in animation.

The child-record hierarchy of the **TimeBehaviorContainer** (section 2.8.34) record B from the first table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000701D | 0061 | TimeBehaviorContainer **- behavior** |  |
| 0000701D | 0008 | RecordHeader **- rh** |  |
| 00007025 | 0018 | **A**: [TimeBehaviorAtom](#Section_9f996c4a3780415c9a6771d323788f95) **- behaviorAtom** |  |
| 0000703D | 001D | **B**: [TimeStringListContainer](#Section_99109d34b306454e8e19da1f090cedd9) **- stringList** |  |
| 0000703D | 0008 | RecordHeader **- rh** |  |
| 00007045 | 0015 | TimeVariantString **- string** |  |
| 00007045 | 0008 | RecordHeader **- rh** |  |
| 0000704D | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000704E | 000C | array of bytes **- stringValue** | ppt\_x |
| 0000705A | 0024 | **C**: [ClientVisualElementContainer](#Section_80b3266a1fe64140acef0483ac355c89) **- clientVisualElement** |  |
| 0000705A | 0008 | RecordHeader **- rh** |  |
| 00007062 | 001C | [VisualElementAtom](#Section_7b47864505d44a2eb21ebbf183e3f73d) **- visualElementAtom** |  |
| 00007062 | 001C | [VisualShapeOrSoundAtom](#Section_980f64aba892406bb4696299033ade3c) **- case of RT\_VisualShapeAtom** |  |
| 00007062 | 001C | [VisualShapeAtom](#Section_a274411d0faa4993b202a7510a93c881) **- case of TL\_ET\_ShapeType** |  |
| 00007062 | 001C | [VisualShapeGeneralAtom](#Section_e3f4be5088fd43fdb68f82f2743e92ea) **- default\_case** |  |
| 00007062 | 0008 | RecordHeader **- rh** |  |
| 0000706A | 0004 | [TimeVisualElementEnum](#Section_203c5f54666740468a63915100e25880) **- type** | 0x00000000 |
| 0000706E | 0004 | [ElementTypeEnum](#Section_9d254b2a9ff04b99b03626152848bf69) **- refType** | 0x00000001 |
| 00007072 | 0004 | unsigned integer **- shapeIdRef** | 0x00001404 |
| 00007076 | 0004 | signed integer **- data1** | 0xFFFFFFFF |
| 0000707A | 0004 | signed integer **- data2** | 0xFFFFFFFF |

Figure 110: TimeBehaviorContainer child-record hierarchy

The  **TimeStringListContainer** (section 2.8.36) record B specifies the properties to be animated.

**stringList.string.stringValue:** "ppt\_x" specifies that the property to be animated is the position of the shape on the horizontal axis.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.type:** 0x00000000 specifies that the animation is applied to the shape.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.refType:** 0x00000001 specifies that the animation target is the shape.

**clientVisualElement.visualElementAtom.case of RT\_VisualShapeAtom.case of TL\_ET\_ShapeType.default\_case.shapeIdRef:** 0x00001404 specifies the [**shape identifier**](#gt_10fbabb4-d33a-4b89-bedd-17cd448fba2b) of the target shape.

The child-record hierarchy of the TimeBehaviorAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007025 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 00007025 | 0008 | RecordHeader **- rh** |  |
| 00007025 | 1 bit | bit **- fAdditivePropertyUsed** | 0x1 |
| 00007025 | 1 bit | bit **- reserved1** | 0x0 |
| 00007025 | 1 bit | bit **- fAttributeNamesPropertyUsed** | 0x1 |
| 00007025 | 1 bit | bit **- reserved2** | 0x0 |
| 00007025 | 28 bits | unsigned integer **- reserved3** | 0x0000000 |
| 00007031 | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 00007035 | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 00007039 | 0004 | signed integer **- behaviorTransform** | 0x00000000 |

Figure 111: TimeBehaviorAtom record A child-record hierarchy

**behaviorAdditive:** 0x00000000 specifies that the animated value replaces the original value of the property being animated.

**behaviorAccumulate:** 0x00000000 specifies that no accumulation between repeating animations occurs.

**behaviorTransform:** 0x00000000 specifies that the animation animates a property of the target object.

The child-record hierarchy of the **ExtTimeNodeContainer** record E from the first table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000707E | 0121 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 0000707E | 0008 | RecordHeader **- rh** |  |
| 00007086 | 0028 | TimeNodeAtom **- timeNodeAtom** |  |
| 00007086 | 0008 | RecordHeader **- rh** |  |
| 0000708E | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 00007092 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 00007096 | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 0000709A | 0004 | unsigned integer **- fill** | 0x00000003 |
| 0000709E | 0004 | signed integer **- reserved2** | 0x00000000 |
| 000070A2 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 000070A6 | 0004 | signed integer **- duration** | 0x000001F4 |
| 000070AA | 1 bit | bit **- fFillProperty** | 0x1 |
| 000070AA | 1 bit | bit **- fRestartProperty** | 0x0 |
| 000070AA | 1 bit | bit **- reserved4** | 0x0 |
| 000070AA | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 000070AA | 1 bit | bit **- fDurationProperty** | 0x1 |
| 000070AA | 27 bits | unsigned integer **- reserved5** | 0x0000000 |
| 000070AE | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000070AE | 0008 | RecordHeader **- rh** |  |
| 000070B6 | 00E9 | **A**: TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |

Figure 112: The third sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a generic behavior that animates the position of the shape on the vertical axis.

**timeNodeAtom.duration:** 0x000001F4 specifies that the duration of this time node is 0.5 seconds.

The child-record hierarchy of the **TimeAnimateBehaviorContainer** (section 2.8.29) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000070B6 | 00E9 | TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 000070B6 | 0008 | RecordHeader **- rh** |  |
| 000070BE | 0014 | TimeAnimateBehaviorAtom **- animateBehaviorAtom** |  |
| 000070BE | 0008 | RecordHeader **- rh** |  |
| 000070C6 | 0004 | unsigned integer **- calcMode** | 0x00000001 |
| 000070CA | 0004 | unsigned integer **- fByPropertyUsed** | 0x00000000 |
| 000070CA | 0004 | unsigned integer **- fFromPropertyUsed** | 0x00000000 |
| 000070CA | 0004 | unsigned integer **- fToPropertyUsed** | 0x00000000 |
| 000070CA | 0004 | unsigned integer **- fCalcModePropertyUsed** | 0x00000001 |
| 000070CA | 0004 | unsigned integer **- fAnimationValuesPropertyUsed** | 0x00000001 |
| 000070CA | 0004 | unsigned integer **- fValueTypePropertyUsed** | 0x00000001 |
| 000070CA | 0004 | unsigned integer **- reserved** | 0x00000000 |
| 000070CE | 0004 | TimeAnimateBehaviorValueTypeEnum **- valueType** | 0x00000001 |
| 000070D2 | 006C | **A**: TimeAnimationValueListContainer **- animateValueList** |  |
| 0000713E | 0061 | **B**: TimeBehaviorContainer **- behavior** |  |

Figure 113: TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

**animateBehaviorAtom.calcMode:** 0x00000001 specifies that the animated value of the property is calculated by linear interpolation.

**animateBehaviorAtom.valueType:** 0x00000001 specifies that the property value is a number.

The child-record hierarchy of the **TimeAnimationValueListContainer** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000070D2 | 006C | TimeAnimationValueListContainer **- animateValueList** |  |
| 000070D2 | 0008 | RecordHeader **- rh** |  |
| 000070DA | 0036 | **A**: TimeAnimationValueListEntry **- timeAnimValueListEntry[0]** |  |
| 000070DA | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 000070DA | 0008 | RecordHeader **- rh** |  |
| 000070E2 | 0004 | signed integer **- time** | 0x00000000 |
| 000070E6 | 001F | TimeVariantString **- case of TL\_TVT\_String** |  |
| 000070E6 | 0008 | RecordHeader **- rh** |  |
| 000070EE | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000070EF | 0016 | array of bytes **- stringValue** | 1+#ppt\_h/2 |
| 00007105 | 000B | TimeVariantString **- varFormula** |  |
| 00007105 | 0008 | RecordHeader **- rh** |  |
| 0000710D | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000710E | 0002 | array of bytes **- stringValue** |  |
| 00007110 | 002E | **B**: TimeAnimationValueListEntry **- timeAnimValueListEntry[1]** |  |
| 00007110 | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 00007110 | 0008 | RecordHeader **- rh** |  |
| 00007118 | 0004 | signed integer **- time** | 0x000003E8 |
| 0000711C | 0017 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 0000711C | 0008 | RecordHeader **- rh** |  |
| 00007124 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007125 | 000E | array of bytes **- stringValue** | #ppt\_y |
| 00007133 | 000B | TimeVariantString **- varFormula** |  |
| 00007133 | 0008 | RecordHeader **- rh** |  |
| 0000713B | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000713C | 0002 | array of bytes **- stringValue** |  |

Figure 114: Child-record hierarchy of TimeAnimationValueListContainer

The **TimeAnimationValueListContainer** record specifies two key points of the animation. The TimeAnimationValueListEntry record A specifies the starting point, while the TimeAnimationValueListEntry record B specifies the endpoint.

**timeAnimValueListEntry[0].timeAnimationValueAtom.time:** 0x00000000 specifies that the first key point is the starting point of the animation.

**timeAnimValueListEntry[0].case of TL\_TVT\_String.stringValue:** "1+#ppt\_h/2" specifies the formula that is used to calculate the property value at time 0x00000000. The value of this formula is the position that is just under the bottom of the slide show, which makes the shape hidden.

**timeAnimValueListEntry[1].timeAnimationValueAtom.time:** 0x000003E8 specifies that the second key point is the endpoint of the animation.

**timeAnimValueListEntry[1].case of TL\_TVT\_String.stringValue:** "#ppt\_y" specifies the formula that is used to calculate the property value at time 0x000003E8. The value of this formula is the original value of the position of the shape on the vertical axis.

The two key points specify that the shape moves from the bottom of the slide show to its original position.

The child-record hierarchy of the **TimeBehaviorContainer** record B from the second table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000713E | 0061 | TimeBehaviorContainer **- behavior** |  |
| 0000713E | 0008 | RecordHeader **- rh** |  |
| 00007146 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 0000715E | 001D | **B**: TimeStringListContainer **- stringList** |  |
| 0000715E | 0008 | RecordHeader **- rh** |  |
| 00007166 | 0015 | TimeVariantString **- string** |  |
| 00007166 | 0008 | RecordHeader **- rh** |  |
| 0000716E | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000716F | 000C | array of bytes **- stringValue** | ppt\_y |
| 0000717B | 0024 | **C**: ClientVisualElementContainer **- clientVisualElement** |  |
| 0000717B | 0008 | RecordHeader **- rh** |  |
| 00007183 | 001C | VisualElementAtom **- visualElementAtom** |  |
| 00007183 | 001C | VisualShapeOrSoundAtom **- case of RT\_VisualShapeAtom** |  |
| 00007183 | 001C | VisualShapeAtom **- case of TL\_ET\_ShapeType** |  |
| 00007183 | 001C | VisualShapeGeneralAtom **- default\_case** |  |
| 00007183 | 0008 | RecordHeader **- rh** |  |
| 0000718B | 0004 | TimeVisualElementEnum **- type** | 0x00000000 |
| 0000718F | 0004 | ElementTypeEnum **- refType** | 0x00000001 |
| 00007193 | 0004 | unsigned integer **- shapeIdRef** | 0x00001404 |
| 00007197 | 0004 | signed integer **- data1** | 0xFFFFFFFF |
| 0000719B | 0004 | signed integer **- data2** | 0xFFFFFFFF |

Figure 115: Child-record hierarchy of TimeBehaviorContainer

The TimeBehaviorAtom record A is similar to the TimeBehaviorAtom record specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **TimeStringListContainer** record B specifies the properties to be animated. The **ClientVisualElementContainer** (section 2.8.44) record B specifies that the target object of the animation is the shape.

**stringList.string.stringValue:** "ppt\_y" specifies that the property to be animated is the position of the shape on the vertical axis.

The child-record hierarchy of the **ExtTimeNodeContainer** record F from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table. This time node contains the spin animation effect.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 0000719F | 022E | **A**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 0000719F | 0008 | RecordHeader **- rh** |
| 000071A7 | 0028 | TimeNodeAtom **- timeNodeAtom** |
| 000071CF | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |
| 000071D7 | 0020 | TimeConditionContainer **- timeCondition** |
| 000071F7 | 01D6 | **B**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 000071F7 | 0008 | RecordHeader **- rh** |
| 000071FF | 0028 | TimeNodeAtom **- timeNodeAtom** |
| 00007227 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |
| 0000722F | 0020 | TimeConditionContainer **- timeCondition** |
| 0000724F | 017E | **C**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |

Figure 116: Third-level and fourth-level ExtTimeNodeContainer child-record hierarchies

The **ExtTimeNodeContainer** record A is similar to the **ExtTimeNodeContainer** record as specified in the second table titled "Third-level ExtTimeNodeContainer child-record hierarchy" in this section, while the **ExtTimeNodeContainer** record B is similar to the **ExtTimeNodeContainer** record as specified in the table titled "Fourth-level ExtTimeNodeContainer child-record hierarchy" in this section.

The child-record hierarchy of the **ExtTimeNodeContainer** record C from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000724F | 017E | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 0000724F | 0008 | RecordHeader **- rh** |  |
| 00007257 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 0000727F | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000072C8 | 0020 | TimeConditionContainer **- timeCondition** |  |
| 000072E8 | 0010 | **C**: [TimeModifierAtom](#Section_bbfa8706196c4508934c8007a84773ea) **- timeModifierAtom[0]** |  |
| 000072E8 | 0008 | RecordHeader **- rh** |  |
| 000072F0 | 0004 | TimeModifierEnum **- type** | 0x00000003 |
| 000072F4 | 0004 | unsigned integer **- value** | 0x00000000 |
| 000072F8 | 0010 | **D**: TimeModifierAtom **- timeModifierAtom[1]** |  |
| 000072F8 | 0008 | RecordHeader **- rh** |  |
| 00007300 | 0004 | TimeModifierEnum **- type** | 0x00000004 |
| 00007304 | 0004 | unsigned integer **- value** | 0x00000000 |
| 00007308 | 0010 | **E**: TimeModifierAtom **- timeModifierAtom[2]** |  |
| 00007308 | 0008 | RecordHeader **- rh** |  |
| 00007310 | 0004 | TimeModifierEnum **- type** | 0x00000005 |
| 00007314 | 0004 | unsigned integer **- value** | 0x00000000 |
| 00007318 | 00B5 | **F**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |

Figure 117: Fifth-level ExtTimeNodeContainer child-record hierarchy

This time node specifies the spin animation effect. The TimeNodeAtom record A is similar to the TimeNodeAtom as specified in the table titled "TimeNodeAtom record A child-record hierarchy in the fifth-level ExtTimeNodeContainer" in this section. The TimeModifierAtom records C, D, and E specify the acceleration, the deceleration, and the automatic reverse attribute of this time node, respectively. The **ExtTimeNodeContainer** record F is the only child time node and contains a rotation behavior.

**timeModifierAtom[0].type:** 0x00000003 specifies that the **timeModifierAtom[0].value** field defines the acceleration of the spin animation effect.

**timeModifierAtom[0].value:** 0x00000000 specifies no acceleration of the spin animation effect.

**timeModifierAtom[1].type:** 0x00000004 specifies that the **timeModifierAtom[1].value** field defines the deceleration of the spin animation effect.

**timeModifierAtom[1].value:** 0x00000000 specifies no deceleration of the spin animation effect.

**timeModifierAtom[2].type:** 0x00000005 specifies that the **timeModifierAtom[2].value** field defines whether the spin animation effect automatically reverse.

**timeModifierAtom[2].value:** 0x00000000 specifies that the spin animation does not automatically reverse.

The child-record hierarchy of the **TimePropertyList2.8.18TimeNodeContainer** record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000727F | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 0000727F | 0008 | RecordHeader **- rh** |  |
| 00007287 | 000D | TimeEffectNodeType **- case of TL\_TPID\_EffectNodeType** |  |
| 00007287 | 0008 | RecordHeader **- rh** |  |
| 0000728F | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 00007290 | 0004 | signed integer **- effectNodeType** | 0x00000001 |
| 00007294 | 000D | TimeEffectID **- case of TL\_TPID\_EffectID** |  |
| 00007294 | 0008 | RecordHeader **- rh** |  |
| 0000729C | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 0000729D | 0004 | signed integer **- effectID** | 0x00000008 |
| 000072A1 | 000D | TimeVariantInt **- case of TL\_TPID\_EffectDir** |  |
| 000072A1 | 0008 | RecordHeader **- rh** |  |
| 000072A9 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000072AA | 0004 | signed integer **- intValue** | 0x00000000 |
| 000072AE | 000D | TimeEffectType **- case of TL\_TPID\_EffectType** |  |
| 000072AE | 0008 | RecordHeader **- rh** |  |
| 000072B6 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000072B7 | 0004 | signed integer **- effectType** | 0x00000003 |
| 000072BB | 000D | TimeGroupID **- case of TL\_TPID\_GroupID** |  |
| 000072BB | 0008 | RecordHeader **- rh** |  |
| 000072C3 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000072C4 | 0004 | signed integer **- groupID** | 0x00000000 |

Figure 118: TimePropertyList4TimeNodeContainer record B child-record hierarchy in the fifth-level ExtTimeNodeContainer

**case of TL\_TPID\_EffectNodeType.effectNodeType:** 0x00000001 specifies that this time node is for a click effect.

**case of TL\_TPID\_EffectID.effectID:** 0x00000008 specifies the identifier of the spin animation effect.

**case of TL\_TPID\_EffectDir.intValue:** 0x00000000 specifies that the direction of the spin animation is clockwise.

**case of TL\_TPID\_EffectType.effectType:** 0x00000003 specifies that the spin animation effect is an emphasis effect.

**case of TL\_TPID\_GroupID.groupID:** 0x00000000 specifies the build identifier for this spin animation effect.

The child-record hierarchy of the **ExtTimeNodeContainer** record F from the second table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table. It contains the rotation behavior that specifies how the shape spins.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007318 | 00B5 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00007318 | 0008 | RecordHeader **- rh** |  |
| 00007320 | 0028 | TimeNodeAtom **- timeNodeAtom** |  |
| 00007320 | 0008 | RecordHeader **- rh** |  |
| 00007328 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 0000732C | 0004 | unsigned integer **- restart** | 0x00000000 |
| 00007330 | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 00007334 | 0004 | unsigned integer **- fill** | 0x00000003 |
| 00007338 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 0000733C | 0001 | unsigned integer **- reserved3** | 0x00 |
| 00007340 | 0004 | signed integer **- duration** | 0x000007D0 |
| 00007344 | 1 bit | bit **- fFillProperty** | 0x1 |
| 00007344 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 00007344 | 1 bit | bit **- reserved4** | 0x0 |
| 00007344 | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 00007344 | 1 bit | bit **- fDurationProperty** | 0x1 |
| 00007344 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |
| 00007348 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00007348 | 0008 | RecordHeader **- rh** |  |
| 00007350 | 007D | **A**: [TimeRotationBehaviorContainer](#Section_2ef1f0c624534be7875ea1a7d7201580) **- timeRotationBehavior** |  |

Figure 119: Sixth-level ExtTimeNodeContainer child-record hierarchy

**timeNodeAtom.duration:** 0x000007D0 specifies that the duration of the animation is 2.0 seconds.

The child-record hierarchy of the **TimeRotationBehaviorContainer** (section 2.8.65) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007350 | 007D | TimeRotationBehaviorContainer **- timeRotationBehavior** |  |
| 00007350 | 0008 | RecordHeader **- rh** |  |
| 00007358 | 001C | [TimeRotationBehaviorAtom](#Section_0fc7d6f315a0464b958c6bfdbf874050) **- rotationBehaviorAtom** |  |
| 00007358 | 0008 | RecordHeader **- rh** |  |
| 00007358 | 1 bit | bit **- fByPropertyUsed** | 0x1 |
| 00007358 | 1 bit | bit **- fFromPropertyUsed** | 0x0 |
| 00007358 | 1 bit | bit **- fToPropertyUsed** | 0x0 |
| 00007358 | 1 bit | bit **- fDirectionPropertyUsed** | 0x0 |
| 00007358 | 28 bits | unsigned integer **- reserved** | 0x0000000 |
| 00007364 | 0004 | Float **- fBy** | 360 |
| 00007368 | 0004 | Float **- fFrom** | 0 |
| 0000736C | 0004 | Float **- fTo** | 360 |
| 00007370 | 0004 | TimeRotationBehaviorDirectionEnum **- rotationDirection** | 0x00000000 |
| 00007374 | 0059 | **A**: TimeBehaviorContainer **- behavior** |  |

Figure 120: TimeRotationBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

**rotationBehaviorAtom.fBy:** 360 specifies that the shape rotates 360 degrees.

**rotationBehaviorAtom.fFrom:** 0 specifies that the rotation starts from the original angle.

**rotationBehaviorAtom.fTo:** 360 specifies that the shape rotates 360 degrees.

**rotationBehaviorAtom.rotationDirection:** 0x00000000 specifies that the rotation is clockwise.

The child-record hierarchy of the **TimeBehaviorContainer** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007374 | 0059 | TimeBehaviorContainer **- behavior** |  |
| 00007374 | 0008 | RecordHeader **- rh** |  |
| 0000737C | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 00007394 | 0015 | TimeStringListContainer **- stringList** |  |
| 00007394 | 0008 | RecordHeader **- rh** |  |
| 0000739C | 000D | TimeVariantString **- string** |  |
| 0000739C | 0008 | RecordHeader **- rh** |  |
| 000073A4 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000073A5 | 0004 | array of bytes **- stringValue** | r |
| 000073A9 | 0024 | **B**: ClientVisualElementContainer **- clientVisualElement** |  |
| 000073A9 | 0008 | RecordHeader **- rh** |  |
| 000073B1 | 001C | VisualElementAtom **- visualElementAtom** |  |
| 000073B1 | 001C | VisualShapeOrSoundAtom **- case of RT\_VisualShapeAtom** |  |
| 000073B1 | 001C | VisualShapeAtom **- case of TL\_ET\_ShapeType** |  |
| 000073B1 | 001C | VisualShapeGeneralAtom **- default\_case** |  |
| 000073B1 | 0008 | RecordHeader **- rh** |  |
| 000073B9 | 0004 | TimeVisualElementEnum **- type** | 0x00000000 |
| 000073BD | 0004 | ElementTypeEnum **- refType** | 0x00000001 |
| 000073C1 | 0004 | unsigned integer **- shapeIdRef** | 0x00001404 |
| 000073C5 | 0004 | signed integer **- data1** | 0xFFFFFFFF |
| 000073C9 | 0004 | signed integer **- data2** | 0xFFFFFFFF |

Figure 121: TimeBehaviorContainer child-record hierarchy

The TimeBehaviorAtom record A is similar to the TimeBehaviorAtom as specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **ClientVisualElementContainer** record B specifies that the target is the shape, and it is similar to the **ClientVisualElementContainer** record as specified in the first table titled "TimeBehaviorContainer child-record hierarchy" in this section.

**stringList.string.stringValue:** "r" specifies that the property to be animated is the rotation angle of the shape.

The child-record hierarchy of the **ExtTimeNodeContainer** record G from the table titled "Second-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table. This time node contains the sink-down animation.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 000073CD | 0679 | **A**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 000073CD | 0008 | RecordHeader **- rh** |
| 000073D5 | 0028 | TimeNodeAtom **- timeNodeAtom** |
| 000073FD | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |
| 00007405 | 0020 | TimeConditionContainer **- timeCondition** |
| 00007425 | 0621 | **B**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 00007425 | 0008 | RecordHeader **- rh** |
| 0000742D | 0028 | TimeNodeAtom **- timeNodeAtom** |
| 00007455 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |
| 0000745D | 0020 | TimeConditionContainer **- timeCondition** |
| 0000747D | 05C9 | **C**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |

Figure 122: Third-level and fourth-level ExtTimeNodeContainer child-record hierarchies

The **ExtTimeNodeContainer** record A is similar to the **ExtTimeNodeContainer** record as specified in the second table titled "Third-level ExtTimeNodeContainer child-record hierarchy" in this section, while the **ExtTimeNodeContainer** record B is similar to the **ExtTimeNodeContainer** record as specified in the table titled "Fourth-level ExtTimeNodeContainer child-record hierarchy" in this section.

The child-record hierarchy of the **ExtTimeNodeContainer** record C from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 0000747D | 05C9 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 0000747D | 0008 | RecordHeader **- rh** |
| 00007485 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |
| 000074AD | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |
| 000074F6 | 0020 | TimeConditionContainer **- timeCondition** |
| 00007516 | 00A7 | **C**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 000075BD | 0115 | **D**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 000076D2 | 012D | **E**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 000077FF | 0149 | **F**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |
| 00007948 | 00FE | **G**: ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |

Figure 123: Fifth-level ExtTimeNodeContainer child-record hierarchy

This time node specifies the sink-down animation effect. The TimeNodeAtom record A is similar to the TimeNodeAtom as specified in the table titled "TimeNodeAtom record A child-record hierarchy in the fifth-level ExtTimeNodeContainer" in this section. The **ExtTimeNodeContainer** record C contains an effect behavior to fade the shape. The **ExtTimeNodeContainer** records C, D, E, and F contain generic behaviors to move the shape out of the slide show. The **ExtTimeNodeContainer** record G contains a set behavior to make the shape invisible at the end.

The child-record hierarchy of the **TimePropertyList2.8.18TimeNodeContainer** record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000074AD | 0049 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000074AD | 0008 | RecordHeader **- rh** |  |
| 000074B5 | 000D | TimeEffectNodeType **- case of TL\_TPID\_EffectNodeType** |  |
| 000074B5 | 0008 | RecordHeader **- rh** |  |
| 000074BD | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000074BE | 0004 | signed integer **- effectNodeType** | 0x00000001 |
| 000074C2 | 000D | TimeEffectID **- case of TL\_TPID\_EffectID** |  |
| 000074C2 | 0008 | RecordHeader **- rh** |  |
| 000074CA | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000074CB | 0004 | signed integer **- effectID** | 0x00000025 |
| 000074CF | 000D | TimeVariantInt **- case of TL\_TPID\_EffectDir** |  |
| 000074CF | 0008 | RecordHeader **- rh** |  |
| 000074D7 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000074D8 | 0004 | signed integer **- intValue** | 0x00000000 |
| 000074DC | 000D | TimeEffectType **- case of TL\_TPID\_EffectType** |  |
| 000074DC | 0008 | RecordHeader **- rh** |  |
| 000074E4 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000074E5 | 0004 | signed integer **- effectType** | 0x00000002 |
| 000074E9 | 000D | TimeGroupID **- case of TL\_TPID\_GroupID** |  |
| 000074E9 | 0008 | RecordHeader **- rh** |  |
| 000074F1 | 0001 | TimeVariantTypeEnum **- type** | 0x01 |
| 000074F2 | 0004 | signed integer **- groupID** | 0x00000002 |

Figure 124: TimePropertyList4TimeNodeContainer record B child-record hierarchy in the fifth-level ExtTimeNodeContainer

**case of TL\_TPID\_EffectID.effectID:** 0x00000025 specifies the identifier of this sink-down animation effect.

**case of TL\_TPID\_EffectDir.intValue:** 0x00000000 specifies no direction for this sink-down animation effect.

**case of TL\_TPID\_EffectType.effectType:** 0x00000002 specifies that this sink-down animation effect is an exit effect.

**case of TL\_TPID\_GroupID.groupID:** 0x00000002 specifies the build identifier of the sink-down animation effect.

The child-record hierarchy of the **ExtTimeNodeContainer** record C from the third table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table. It contains an effect behavior to fade out the shape.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007516 | 00A7 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00007516 | 0008 | RecordHeader **- rh** |  |
| 0000751E | 0028 | TimeNodeAtom **- timeNodeAtom** |  |
| 0000751E | 0008 | RecordHeader **- rh** |  |
| 00007526 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 0000752A | 0004 | unsigned integer **- restart** | 0x00000000 |
| 0000752E | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 00007532 | 0004 | unsigned integer **- fill** | 0x00000000 |
| 00007536 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 0000753A | 0001 | unsigned integer **- reserved3** | 0x00 |
| 0000753E | 0004 | signed integer **- duration** | 0x000003E8 |
| 00007542 | 1 bit | bit **- fFillProperty** | 0x0 |
| 00007542 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 00007542 | 1 bit | bit **- reserved4** | 0x0 |
| 00007542 | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 00007542 | 1 bit | bit **- fDurationProperty** | 0x1 |
| 00007542 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |
| 00007546 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00007546 | 0008 | RecordHeader **- rh** |  |
| 0000754E | 006F | **A**: [TimeEffectBehaviorContainer](#Section_498a5d0f07254a06a7de7c67394e9146) **- timeEffectBehavior** |  |

Figure 125: The first sixth-level ExtTimeNodeContainer child-record hierarchy

**timeNodeAtom.fill:** 0x00000000 specifies that the animated values of the property remain at their ending values while the parent time node at the fifth level is still running or holding.

**timeNodeAtom.duration:** 0x000003E8 specifies that the duration of the effect animation is 1.0 seconds.

The child-record hierarchy of the **TimeEffectBehaviorContainer** (section 2.8.61) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000754E | 006F | TimeEffectBehaviorContainer **- timeEffectBehavior** |  |
| 0000754E | 0008 | RecordHeader **- rh** |  |
| 00007556 | 0010 | [TimeEffectBehaviorAtom](#Section_bf8ed545f2f548528ffb7b69c6ddc128) **- effectBehaviorAtom** |  |
| 00007556 | 0008 | RecordHeader **- rh** |  |
| 00007556 | 1 bit | bit **- fTransitionPropertyUsed** | 0x1 |
| 00007556 | 1 bit | bit **- fTypePropertyUsed** | 0x1 |
| 00007556 | 1 bit | bit **- fProgressPropertyUsed** | 0x0 |
| 00007556 | 1 bit | bit **- fRuntimeContextObsolete** | 0x0 |
| 00007556 | 28 bits | unsigned integer **- reserved** | 0x0000000 |
| 00007562 | 0004 | unsigned integer **- effectTransition** | 0x00000001 |
| 00007566 | 0013 | TimeVariantString **- varType** |  |
| 00007566 | 0008 | RecordHeader **- rh** |  |
| 0000756E | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000756F | 000A | array of bytes **- stringValue** | fade |
| 00007579 | 0044 | **A**: TimeBehaviorContainer **- behavior** |  |

Figure 126: TimeEffectBehaviorContainer child-record hierarchy

**effectBehaviorAtom.effectTransition:** 0x00000001 specifies that the animation behavior fades out the shape.

**varType.stringValue:** "fade" specifies that the effect behavior is a fade effect.

The child-record hierarchy of the **TimeBehaviorContainer** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007579 | 0044 | TimeBehaviorContainer **- behavior** |  |
| 00007579 | 0008 | RecordHeader **- rh** |  |
| 00007581 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 00007581 | 0008 | RecordHeader **- rh** |  |
| 00007581 | 0004 | unsigned integer **- fAdditivePropertyUsed** | 0x00000000 |
| 00007581 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 00007581 | 0004 | unsigned integer **- fAttributeNamesPropertyUsed** | 0x00000000 |
| 00007581 | 0004 | unsigned integer **- reserved2** | 0x00000000 |
| 00007581 | 0004 | unsigned integer **- reserved3** | 0x00000000 |
| 0000758D | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 00007591 | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 00007595 | 0004 | signed integer **- behaviorTransform** | 0x00000000 |
| 00007599 | 0024 | **B**: ClientVisualElementContainer **- clientVisualElement** |  |
| 00007599 | 0008 | RecordHeader **- rh** |  |
| 000075A1 | 001C | VisualElementAtom **- visualElementAtom** |  |
| 000075A1 | 001C | VisualShapeOrSoundAtom **- case of RT\_VisualShapeAtom** |  |
| 000075A1 | 001C | VisualShapeAtom **- case of TL\_ET\_ShapeType** |  |
| 000075A1 | 001C | VisualShapeGeneralAtom **- default\_case** |  |
| 000075A1 | 0008 | RecordHeader **- rh** |  |
| 000075A9 | 0004 | TimeVisualElementEnum **- type** | 0x00000000 |
| 000075AD | 0004 | ElementTypeEnum **- refType** | 0x00000001 |
| 000075B1 | 0004 | unsigned integer **- shapeIdRef** | 0x00001404 |
| 000075B5 | 0004 | signed integer **- data1** | 0xFFFFFFFF |
| 000075B9 | 0004 | signed integer **- data2** | 0xFFFFFFFF |

Figure 127: TimeBehaviorContainer child-record hierarchy

The TimeBehaviorAtom record A is similar to the TimeBehaviorAtom record as specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **ClientVisualElementContainer** record B specifies that the target of the animation is the shape.

The child-record hierarchy of the **ExtTimeNodeContainer** record F from the third table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000075BD | 0115 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000075BD | 0008 | RecordHeader **- rh** |  |
| 000075C5 | 0028 | TimeNodeAtom **- timeNodeAtom** |  |
| 000075C5 | 0008 | RecordHeader **- rh** |  |
| 000075CD | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000075D1 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 000075D5 | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 000075D9 | 0004 | unsigned integer **- fill** | 0x00000000 |
| 000075DD | 0004 | signed integer **- reserved2** | 0x00000000 |
| 000075E1 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 000075E5 | 0004 | signed integer **- duration** | 0x000003E8 |
| 000075E9 | 1 bit | bit **- fFillProperty** | 0x1 |
| 000075E9 | 1 bit | bit **- fRestartProperty** | 0x0 |
| 000075E9 | 1 bit | bit **- reserved4** | 0x0 |
| 000075E9 | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 000075E9 | 1 bit | bit **- fDurationProperty** | 0x1 |
| 000075E9 | 27 bits | unsigned integer **- reserved5** | 0x0000000 |
| 000075ED | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 000075ED | 0008 | RecordHeader **- rh** |  |
| 000075F5 | 00DD | **A**: TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |

Figure 128: The second sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a generic behavior that animates the position of the shape on the horizontal axis.

**timeNodeAtom.duration:** 0x000003E8 specifies that the duration of this time node is 1.0 seconds.

The child-record hierarchy of the **TimeAnimateBehaviorContainer** (section 2.8.29) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000075F5 | 00DD | TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 000075F5 | 0008 | RecordHeader **- rh** |  |
| 000075FD | 0014 | TimeAnimateBehaviorAtom **- animateBehaviorAtom** |  |
| 000075FD | 0008 | RecordHeader **- rh** |  |
| 00007605 | 0004 | unsigned integer **- calcMode** | 0x00000001 |
| 00007609 | 0004 | unsigned integer **- fByPropertyUsed** | 0x00000000 |
| 00007609 | 0004 | unsigned integer **- fFromPropertyUsed** | 0x00000000 |
| 00007609 | 0004 | unsigned integer **- fToPropertyUsed** | 0x00000000 |
| 00007609 | 0004 | unsigned integer **- fCalcModePropertyUsed** | 0x00000001 |
| 00007609 | 0004 | unsigned integer **- fAnimationValuesPropertyUsed** | 0x00000001 |
| 00007609 | 0004 | unsigned integer **- fValueTypePropertyUsed** | 0x00000001 |
| 00007609 | 0004 | unsigned integer **- reserved** | 0x00000000 |
| 0000760D | 0004 | TimeAnimateBehaviorValueTypeEnum **- valueType** | 0x00000001 |
| 00007611 | 0060 | **A**: TimeAnimationValueListContainer **- animateValueList** |  |
| 00007671 | 0061 | **B**: TimeBehaviorContainer **- behavior** |  |

Figure 129: TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

**animateBehaviorAtom.calcMode:** 0x00000001 specifies that the animated value of the property is calculated by linear interpolation.

The child-record hierarchy of the **TimeAnimationValueListContainer** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007611 | 0060 | TimeAnimationValueListContainer **- animateValueList** |  |
| 00007611 | 0008 | RecordHeader **- rh** |  |
| 00007619 | 002C | **A**: TimeAnimationValueListEntry **- timeAnimValueListEntry[0]** |  |
| 00007619 | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 00007619 | 0008 | RecordHeader **- rh** |  |
| 00007621 | 0004 | signed integer **- time** | 0x00000000 |
| 00007625 | 0015 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 00007625 | 0008 | RecordHeader **- rh** |  |
| 0000762D | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000762E | 000C | array of bytes **- stringValue** | ppt\_x |
| 0000763A | 000B | TimeVariantString **- varFormula** |  |
| 0000763A | 0008 | RecordHeader **- rh** |  |
| 00007642 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007643 | 0002 | array of bytes **- stringValue** |  |
| 00007645 | 002C | **B**: TimeAnimationValueListEntry **- timeAnimValueListEntry[1]** |  |
| 00007645 | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 00007645 | 0008 | RecordHeader **- rh** |  |
| 0000764D | 0004 | signed integer **- time** | 0x000003E8 |
| 00007651 | 0015 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 00007651 | 0008 | RecordHeader **- rh** |  |
| 00007659 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000765A | 000C | array of bytes **- stringValue** | ppt\_x |
| 00007666 | 000B | TimeVariantString **- varFormula** |  |
| 00007666 | 0008 | RecordHeader **- rh** |  |
| 0000766E | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000766F | 0002 | array of bytes **- stringValue** |  |

Figure 130: Child-record hierarchy of TimeAnimationValueListContainer

The **TimeAnimationValueListContainer** (section 2.8.31) record specifies two key points of the animation. The TimeAnimationValueListEntry record A specifies the starting point, while the TimeAnimationValueListEntry record B specifies the endpoint.

**timeAnimValueListEntry[0].timeAnimationValueAtom.time:** 0x00000000 specifies that the first key point is the starting point of the animation.

**timeAnimValueListEntry[0].case of TL\_TVT\_String.stringValue:** "ppt\_x" specifies the formula that is used to calculate the property value at time 0x00000000. The value of this formula is the original value of the position of the shape on the horizontal axis.

**timeAnimValueListEntry[1].timeAnimationValueAtom.time:** 0x000003E8 specifies that the second key point is the endpoint of the animation.

**timeAnimValueListEntry[1].case of TL\_TVT\_String.stringValue:** "ppt\_x" specifies the formula that is used to calculate the property value at time 0x000003E8. The value of this formula is the original value of the position of the shape on the horizontal axis.

Because the values at the two key points are identical and equal to the original value of the position on the horizontal axis, the shape does not change position on the horizontal axis during the sink-down animation.

The child-record hierarchy of the **TimeBehaviorContainer** record B from the third table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007671 | 0061 | TimeBehaviorContainer **- behavior** |  |
| 00007671 | 0008 | RecordHeader **- rh** |  |
| 00007679 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 00007679 | 0008 | RecordHeader **- rh** |  |
| 00007679 | 1 bit | bit **- fAdditivePropertyUsed** | 0x0 |
| 00007679 | 1 bit | bit **- reserved1** | 0x0 |
| 00007679 | 1 bit | bit **- fAttributeNamesPropertyUsed** | 0x1 |
| 00007679 | 1 bit | bit **- reserved2** | 0x0 |
| 00007679 | 28 bits | unsigned integer **- reserved3** | 0x0000000 |
| 00007685 | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 00007689 | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 0000768D | 0004 | signed integer **- behaviorTransform** | 0x00000000 |
| 00007691 | 001D | TimeStringListContainer **- stringList** |  |
| 00007691 | 0008 | RecordHeader **- rh** |  |
| 00007699 | 0015 | TimeVariantString **- string** |  |
| 00007699 | 0008 | RecordHeader **- rh** |  |
| 000076A1 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000076A2 | 000C | array of bytes **- stringValue** | ppt\_x |
| 000076AE | 0024 | **B**: ClientVisualElementContainer **- clientVisualElement** |  |

Figure 131: Child-record hierarchy of TimeBehaviorContainer

The TimeBehaviorAtom record A is similar to the record as specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **ClientVisualElementContainer** (section 2.8.44) record B specifies that the target of the animation is the shape.

**stringList.string.stringValue:** "ppt\_x" specifies that the property to be animated is the position of the shape on the horizontal axis.

The child-record hierarchy of the **ExtTimeNodeContainer** record G from the third table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000076D2 | 012D | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000076D2 | 0008 | RecordHeader **- rh** |  |
| 000076DA | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00007702 | 0008 | TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00007702 | 0008 | RecordHeader **- rh** |  |
| 0000770A | 00E5 | **B**: TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 000077EF | 0010 | **C**: TimeModifierAtom **- timeModifierAtom** |  |
| 000077EF | 0008 | RecordHeader **- rh** |  |
| 000077F7 | 0004 | TimeModifierEnum **- type** | 0x00000004 |
| 000077FB | 0004 | unsigned integer **- value** | 0x3F800000 |

Figure 132: The third sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a generic behavior that animates the position of the shape on the vertical axis. The TimeModifierAtom record C specifies the deceleration attribute that the animation will use.

**timeModifierAtom.type:** 0x00000004 specifies that the **timeModifierAtom.value** field defines the deceleration of the generic behavior as specified in the **TimeAnimateBehaviorContainer** (section 2.8.29) record B.

**timeModifierAtom.value:** 0x3F800000 specifies that the deceleration of the behavior occurs during the entire length of the animation.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000076DA | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 000076DA | 0008 | RecordHeader **- rh** |  |
| 000076E2 | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000076E6 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 000076EA | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 000076EE | 0004 | unsigned integer **- fill** | 0x00000000 |
| 000076F2 | 0004 | signed integer **- reserved2** | 0x00000000 |
| 000076F6 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 000076FA | 0004 | signed integer **- duration** | 0x00000064 |
| 000076FE | 1 bit | bit **- fFillProperty** | 0x1 |
| 000076FE | 1 bit | bit **- fRestartProperty** | 0x0 |
| 000076FE | 1 bit | bit **- reserved4** | 0x0 |
| 000076FE | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 000076FE | 1 bit | bit **- fDurationProperty** | 0x1 |
| 000076FE | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 133: TimeNodeAtom record A child-record hierarchy in the sixth-level ExtTimeNodeContainer

**duration:** 0x00000064 specifies that the duration of the animation is 0.1 seconds.

The child-record hierarchy of the **TimeAnimateBehaviorContainer** (section 2.8.29) record B from the second table titled "The third sixth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000770A | 00E5 | TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 0000770A | 0008 | RecordHeader **- rh** |  |
| 00007712 | 0014 | **A**: TimeAnimateBehaviorAtom **- animateBehaviorAtom** |  |
| 00007712 | 0008 | RecordHeader **- rh** |  |
| 0000771A | 0004 | unsigned integer **- calcMode** | 0x00000001 |
| 0000771E | 0004 | unsigned integer **- fByPropertyUsed** | 0x00000000 |
| 0000771E | 0004 | unsigned integer **- fFromPropertyUsed** | 0x00000000 |
| 0000771E | 0004 | unsigned integer **- fToPropertyUsed** | 0x00000000 |
| 0000771E | 0004 | unsigned integer **- fCalcModePropertyUsed** | 0x00000001 |
| 0000771E | 0004 | unsigned integer **- fAnimationValuesPropertyUsed** | 0x00000001 |
| 0000771E | 0004 | unsigned integer **- fValueTypePropertyUsed** | 0x00000001 |
| 0000771E | 0004 | unsigned integer **- reserved** | 0x00000000 |
| 00007722 | 0004 | TimeAnimateBehaviorValueTypeEnum **- valueType** | 0x00000001 |
| 00007726 | 0068 | **B**: TimeAnimationValueListContainer **- animateValueList** |  |
| 0000778E | 0061 | **C**: TimeBehaviorContainer **- behavior** |  |

Figure 134: TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

The TimeAnimateBehaviorAtom record A is similar to the TimeAnimateBehaviorAtom record as specified in the third table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section.

The child-record hierarchy of the **TimeAnimationValueListContainer** (section 2.8.31) record B from the fourth table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007726 | 0068 | TimeAnimationValueListContainer **- animateValueList** |  |
| 00007726 | 0008 | RecordHeader **- rh** |  |
| 0000772E | 002C | **A**: TimeAnimationValueListEntry **- timeAnimValueListEntry[0]** |  |
| 0000772E | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 0000772E | 0008 | RecordHeader **- rh** |  |
| 00007736 | 0004 | signed integer **- time** | 0x00000000 |
| 0000773A | 0015 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 0000773A | 0008 | RecordHeader **- rh** |  |
| 00007742 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007743 | 000C | array of bytes **- stringValue** | ppt\_y |
| 0000774F | 000B | TimeVariantString **- varFormula** |  |
| 0000774F | 0008 | RecordHeader **- rh** |  |
| 00007757 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007758 | 0002 | array of bytes **- stringValue** |  |
| 0000775A | 0034 | **B**: TimeAnimationValueListEntry **- timeAnimValueListEntry[1]** |  |
| 0000775A | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 0000775A | 0008 | RecordHeader **- rh** |  |
| 00007762 | 0004 | signed integer **- time** | 0x000003E8 |
| 00007766 | 001D | TimeVariantString **- case of TL\_TVT\_String** |  |
| 00007766 | 0008 | RecordHeader **- rh** |  |
| 0000776E | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000776F | 0014 | array of bytes **- stringValue** | ppt\_y-.03 |
| 00007783 | 000B | TimeVariantString **- varFormula** |  |
| 00007783 | 0008 | RecordHeader **- rh** |  |
| 0000778B | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000778C | 0002 | array of bytes **- stringValue** |  |

Figure 135: TimeAnimationValueListContainer child-record hierarchy

**timeAnimValueListEntry[0].timeAnimationValueAtom.time:** 0x00000000 specifies that the first key point is the starting point of the animation.

**timeAnimValueListEntry[0].case of TL\_TVT\_String.stringValue:** "ppt\_y" specifies the formula that is used to calculate the property value at time 0x00000000. The value of this formula is the original value of the position of the shape on the vertical axis.

**timeAnimValueListEntry[1].timeAnimationValueAtom.time:** 0x000003E8 specifies that the second key point is the endpoint of the animation.

**timeAnimValueListEntry[1].case of TL\_TVT\_String.stringValue:** "ppt\_y-.03" specifies the formula that is used to calculate the property value at time 0x000003E8. The value of this formula moves the shape above its original position by a small amount in the vertical direction.

The child-record hierarchy of the **TimeBehaviorContainer** record C from the fourth table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in s section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000778E | 0061 | TimeBehaviorContainer **- behavior** |  |
| 0000778E | 0008 | RecordHeader **- rh** |  |
| 00007796 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 00007796 | 0008 | RecordHeader **- rh** |  |
| 00007796 | 1 bit | bit **- fAdditivePropertyUsed** | 0x0 |
| 00007796 | 1 bit | bit **- reserved1** | 0x0 |
| 00007796 | 1 bit | bit **- fAttributeNamesPropertyUsed** | 0x1 |
| 00007796 | 1 bit | bit **- reserved2** | 0x0 |
| 00007796 | 28 bits | unsigned integer **- reserved3** | 0x0000000 |
| 000077A2 | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 000077A6 | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 000077AA | 0004 | signed integer **- behaviorTransform** | 0x00000000 |
| 000077AE | 001D | TimeStringListContainer **- stringList** |  |
| 000077AE | 0008 | RecordHeader **- rh** |  |
| 000077B6 | 0015 | TimeVariantString **- string** |  |
| 000077B6 | 0008 | RecordHeader **- rh** |  |
| 000077BE | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000077BF | 000C | array of bytes **- stringValue** | ppt\_y |
| 000077CB | 0024 | **B**: ClientVisualElementContainer **- clientVisualElement** |  |

Figure 23: TimeBehaviorContainer child-record hierarchy

The TimeBehaviorAtom record A is similar to the TimeBehaviorAtom record as specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **ClientVisualElementContainer** record B specifies that the target of the animation is the shape.

**stringList.string.stringValue:** "ppt\_y" specifies that the property to be animated is the position of the shape on the vertical axis.

The child-record hierarchy of the **ExtTimeNodeContainer** record F from the third table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000077FF | 0149 | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 000077FF | 0008 | RecordHeader **- rh** |  |
| 00007807 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 0000782F | 0008 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00007837 | 00E1 | **C**: TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 00007918 | 0020 | **D**: TimeConditionContainer **- timeCondition** |  |
| 00007918 | 0008 | RecordHeader **- rh** |  |
| 00007920 | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00007920 | 0008 | RecordHeader **- rh** |  |
| 00007928 | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 0000792C | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 00007930 | 0004 | unsigned integer **- id** | 0x00000000 |
| 00007934 | 0004 | signed integer **- delay** | 0x00000064 |
| 00007938 | 0010 | **E**: TimeModifierAtom **- timeModifierAtom** |  |
| 00007938 | 0008 | RecordHeader **- rh** |  |
| 00007940 | 0004 | TimeModifierEnum **- type** | 0x00000003 |
| 00007944 | 0004 | unsigned integer **- value** | 0x3F800000 |

Figure 137: The fourth sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a generic behavior that animates the position of the shape on the vertical axis. The **TimeConditionContainer** record D specifies that this behavior is deferred until the behaviors contained in the **ExtTimeNodeContainer** records F and G from the third table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section start. The **TimePropertyList4TimeNodeContainer** record B is similar to the **TimePropertyList4TimeNodeContainer** record as specified in the second table titled "The third sixth-level ExtTimeNodeContainer child-record hierarchy" in this section.

**timeCondition.conditionAtom.delay:** 0x00000064 specifies that this time node is delayed 0.1 seconds after its parent time node at the fifth level is activated.

**timeModifierAtom.type:** 0x00000003 specifies that the **timeModifierAtom.value** field defines the acceleration of the rotation animation.

**timeModifierAtom.value:** 0x3F800000 specifies the acceleration occurs over the entire duration of the behavior.

The child-record hierarchy of the TimeNodeAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007807 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00007807 | 0008 | RecordHeader **- rh** |  |
| 0000780F | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 00007813 | 0004 | unsigned integer **- restart** | 0x00000000 |
| 00007817 | 0004 | TimeNodeTypeEnum **- type** | 0x00000003 |
| 0000781B | 0004 | unsigned integer **- fill** | 0x00000000 |
| 0000781F | 0004 | signed integer **- reserved2** | 0x00000000 |
| 00007823 | 0001 | unsigned integer **- reserved3** | 0x00 |
| 00007827 | 0004 | signed integer **- duration** | 0x00000384 |
| 0000782B | 1 bit | bit **- fFillProperty** | 0x1 |
| 0000782B | 1 bit | bit **- fRestartProperty** | 0x0 |
| 0000782B | 1 bit | bit **- reserved4** | 0x0 |
| 0000782B | 1 bit | bit **- fGroupingTypeProperty** | 0x1 |
| 0000782B | 1 bit | bit **- fDurationProperty** | 0x1 |
| 0000782B | 27 bits | unsigned integer **- reserved5** | 0x0000000 |

Figure 138: TimeNodeAtom record A child-record hierarchy in the sixth-level ExtTimeNodeContainer

**duration:** 0x00000384 specifies that the duration of this time node is 0.9 seconds.

The child-record hierarchy of the **TimeAnimateBehaviorContainer** (section 2.8.29) record C from the table titled "The fourth sixth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007837 | 00E1 | TimeAnimateBehaviorContainer **- timeAnimateBehavior** |  |
| 00007837 | 0008 | RecordHeader **- rh** |  |
| 0000783F | 0014 | **A**: TimeAnimateBehaviorAtom **- animateBehaviorAtom** |  |
| 0000783F | 0008 | RecordHeader **- rh** |  |
| 00007847 | 0004 | unsigned integer **- calcMode** | 0x00000001 |
| 0000784B | 1 bit | bit **- fByPropertyUsed** | 0x0 |
| 0000784B | 1 bit | bit **- fFromPropertyUsed** | 0x0 |
| 0000784B | 1 bit | bit **- fToPropertyUsed** | 0x0 |
| 0000784B | 1 bit | bit **- fCalcModePropertyUsed** | 0x1 |
| 0000784B | 1 bit | bit **- fAnimationValuesPropertyUsed** | 0x1 |
| 0000784B | 1 bit | bit **- fValueTypePropertyUsed** | 0x1 |
| 0000784B | 26 bits | unsigned integer **- reserved** | 0x0000000 |
| 0000784F | 0004 | TimeAnimateBehaviorValueTypeEnum **- valueType** | 0x00000001 |
| 00007853 | 0064 | **B**: TimeAnimationValueListContainer **- animateValueList** |  |
| 000078B7 | 0061 | **C**: TimeBehaviorContainer **- behavior** |  |

Figure 139: TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

The TimeAnimateBehaviorAtom record A is similar to the TimeAnimateBehaviorAtom record as specified in the third table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section.

The child-record hierarchy of the **TimeAnimationValueListContainer** (section 2.8.31) record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007853 | 0064 | TimeAnimationValueListContainer **- animateValueList** |  |
| 00007853 | 0008 | RecordHeader **- rh** |  |
| 0000785B | 002C | **A**: TimeAnimationValueListEntry **- timeAnimValueListEntry[0]** |  |
| 0000785B | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 0000785B | 0008 | RecordHeader **- rh** |  |
| 00007863 | 0004 | signed integer **- time** | 0x00000000 |
| 00007867 | 0015 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 00007867 | 0008 | RecordHeader **- rh** |  |
| 0000786F | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007870 | 000C | array of bytes **- stringValue** | ppt\_y |
| 0000787C | 000B | TimeVariantString **- varFormula** |  |
| 0000787C | 0008 | RecordHeader **- rh** |  |
| 00007884 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 00007885 | 0002 | array of bytes **- stringValue** |  |
| 00007887 | 0030 | **B**: TimeAnimationValueListEntry **- timeAnimValueListEntry[1]** |  |
| 00007887 | 000C | TimeAnimationValueAtom **- timeAnimationValueAtom** |  |
| 00007887 | 0008 | RecordHeader **- rh** |  |
| 0000788F | 0004 | signed integer **- time** | 0x000003E8 |
| 00007893 | 0019 | TimeVariantString **- case of TL\_TVT\_String** |  |
| 00007893 | 0008 | RecordHeader **- rh** |  |
| 0000789B | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 0000789C | 0010 | array of bytes **- stringValue** | ppt\_y+1 |
| 000078AC | 000B | TimeVariantString **- varFormula** |  |
| 000078AC | 0008 | RecordHeader **- rh** |  |
| 000078B4 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000078B5 | 0002 | array of bytes **- stringValue** |  |

Figure 140: TimeAnimationValueListContainer child-record hierarchy

The **TimeAnimationValueListContainer** record (section 2.8.31) specifies two key points of the animation. The TimeAnimationValueListEntry record A specifies the starting point, while the TimeAnimationValueListEntry record B specifies the endpoint.

**timeAnimValueListEntry[0].timeAnimationValueAtom.time:** 0x00000000 specifies that the first key point is the starting point of the animation.

**timeAnimValueListEntry[0].case of TL\_TVT\_String.stringValue:** "ppt\_y" specifies the formula that is used to calculate the property value at time 0x00000000. The value of this formula is the original value of the position of the shape on the vertical axis.

**timeAnimValueListEntry[1].timeAnimationValueAtom.time:** 0x000003E8 specifies that the second key point is the endpoint of the animation.

**timeAnimValueListEntry[1].case of TL\_TVT\_String.stringValue:** "ppt\_y+1" specifies the formula that is used to calculate the property value at time 0x000003E8. The value of this formula makes sure that the shape is moved beneath the bottom of slide show where the shape is invisible.

This behavior moves the shape from its original position to a position beneath the slide show so that the shape is invisible.

The child-record hierarchy of the **TimeBehaviorContainer** record C from the fifth table titled "TimeAnimateBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000078B7 | 0061 | TimeBehaviorContainer **- behavior** |  |
| 000078B7 | 0008 | RecordHeader **- rh** |  |
| 000078BF | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 000078BF | 0008 | RecordHeader **- rh** |  |
| 000078BF | 0004 | unsigned integer **- fAdditivePropertyUsed** | 0x00000000 |
| 000078BF | 0004 | unsigned integer **- reserved1** | 0x00000000 |
| 000078BF | 0004 | unsigned integer **- fAttributeNamesPropertyUsed** | 0x00000001 |
| 000078BF | 0004 | unsigned integer **- reserved2** | 0x00000000 |
| 000078BF | 0004 | unsigned integer **- reserved3** | 0x00000000 |
| 000078CB | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 000078CF | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 000078D3 | 0004 | signed integer **- behaviorTransform** | 0x00000000 |
| 000078D7 | 001D | TimeStringListContainer **- stringList** |  |
| 000078D7 | 0008 | RecordHeader **- rh** |  |
| 000078DF | 0015 | TimeVariantString **- string** |  |
| 000078DF | 0008 | RecordHeader **- rh** |  |
| 000078E7 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000078E8 | 000C | array of bytes **- stringValue** | ppt\_y |
| 000078F4 | 0024 | **B**: ClientVisualElementContainer **- clientVisualElement** |  |

Figure 141: Child-record hierarchy of TimeBehaviorContainer

The TimeBehaviorAtom record A is similar to the TimeBehaviorAtom record as specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **ClientVisualElementContainer** record B specifies that the target of the animation is the shape.

**stringList.string.stringValue:** "ppt\_y" specifies that the property to be animated is the position of the shape on the vertical axis.

The child-record hierarchy of the **ExtTimeNodeContainer** record G from the third table titled "Fifth-level ExtTimeNodeContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007948 | 00FE | ExtTimeNodeContainer **- case of RT\_TimeExtTimeNodeContainer** |  |
| 00007948 | 0008 | RecordHeader **- rh** |  |
| 00007950 | 0028 | **A**: TimeNodeAtom **- timeNodeAtom** |  |
| 00007978 | 0008 | **B**: TimePropertyList4TimeNodeContainer **- timePropertyList** |  |
| 00007980 | 00A6 | **C**: TimeSetBehaviorContainer **- timeSetBehavior** |  |
| 00007A26 | 0020 | **D**: TimeConditionContainer **- timeCondition** |  |
| 00007A26 | 0008 | RecordHeader **- rh** |  |
| 00007A2E | 0018 | TimeConditionAtom **- conditionAtom** |  |
| 00007A2E | 0008 | RecordHeader **- rh** |  |
| 00007A36 | 0004 | TriggerObjectEnum **- triggerObject** | 0x00000000 |
| 00007A3A | 0004 | unsigned integer **- triggerEvent** | 0x00000000 |
| 00007A3E | 0004 | unsigned integer **- id** | 0x00000000 |
| 00007A42 | 0004 | signed integer **- delay** | 0x000003E7 |

Figure 142: The fifth sixth-level ExtTimeNodeContainer child-record hierarchy

This time node contains a set behavior that hides the shape. The TimeNodeAtom record A is similar to the record specified in the second table titled "TimeNodeAtom record A child-record hierarchy in the sixth-level ExtTimeNodeContainer" in this section. The **TimePropertyList4TimeNodeContainer** record B is similar to the **TimePropertyList4TimeNodeContainer** record as specified in the second table titled "The second sixth-level ExtTimeNodeContainer child-record hierarchy" in this section. The **TimeConditionContainer** record D specifies that this behavior is deferred until the last millisecond.

**timeCondition.conditionAtom.delay:** 0x000003E7 specifies that this time node will start 0.999 seconds after the parent time node at the fifth level is activated.

The child-record hierarchy of the **TimeSetBehaviorContainer** record C from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007980 | 00A6 | TimeSetBehaviorContainer **- timeSetBehavior** |  |
| 00007980 | 0008 | RecordHeader **- rh** |  |
| 00007988 | 0010 | **A**: [TimeSetBehaviorAtom](#Section_f8876381cf7f4d2b9888965e2929c9dc) **- setBehaviorAtom** |  |
| 00007988 | 0008 | RecordHeader **- rh** |  |
| 00007988 | 0004 | unsigned integer **- fToPropertyUsed** | 0x00000001 |
| 00007988 | 0004 | unsigned integer **- fValueTypePropertyUsed** | 0x00000000 |
| 00007988 | 0004 | unsigned integer **- reserved** | 0x00000000 |
| 00007994 | 0004 | TimeAnimateBehaviorValueTypeEnum **- valueType** | 0x00000001 |
| 00007998 | 0017 | TimeVariantString **- varTo** |  |
| 00007998 | 0008 | RecordHeader **- rh** |  |
| 000079A0 | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000079A1 | 000E | array of bytes **- stringValue** | hidden |
| 000079AF | 0077 | **B**: TimeBehaviorContainer **- behavior** |  |

Figure 143: TimeSetBehaviorContainer child-record hierarchy in the sixth-level ExtTimeNodeContainer

The TimeSetBehaviorAtom record A is similar to the TimeSetBehaviorAtom record as specified in the table titled "Child-record hierarchy of TimeSetBehaviorContainer in the sixth-level ExtTimeNodeContainer" in section 3.7.1.

**varTo.stringValue:** "hidden" specifies that the shape is invisible.

The child-record hierarchy of the **TimeBehaviorContainer** record B from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000079AF | 0077 | TimeBehaviorContainer **- behavior** |  |
| 000079AF | 0008 | RecordHeader **- rh** |  |
| 000079B7 | 0018 | **A**: TimeBehaviorAtom **- behaviorAtom** |  |
| 000079B7 | 0008 | RecordHeader **- rh** |  |
| 000079B7 | 1 bit | bit **- fAdditivePropertyUsed** | 0x0 |
| 000079B7 | 1 bit | bit **- reserved1** | 0x0 |
| 000079B7 | 1 bit | bit **- fAttributeNamesPropertyUsed** | 0x1 |
| 000079B7 | 1 bit | bit **- reserved2** | 0x0 |
| 000079B7 | 28 bits | unsigned integer **- reserved3** | 0x0000000 |
| 000079C3 | 0004 | unsigned integer **- behaviorAdditive** | 0x00000000 |
| 000079C7 | 0004 | signed integer **- behaviorAccumulate** | 0x00000000 |
| 000079CB | 0004 | signed integer **- behaviorTransform** | 0x00000000 |
| 000079CF | 0033 | TimeStringListContainer **- stringList** |  |
| 000079CF | 0008 | RecordHeader **- rh** |  |
| 000079D7 | 002B | TimeVariantString **- string** |  |
| 000079D7 | 0008 | RecordHeader **- rh** |  |
| 000079DF | 0001 | TimeVariantTypeEnum **- type** | 0x03 |
| 000079E0 | 0022 | array of bytes **- stringValue** | style.visibility |
| 00007A02 | 0024 | **B**: ClientVisualElementContainer **- clientVisualElement** |  |

Figure 144: TimeBehaviorContainer child-record hierarchy

The TimeBehaviorAtom record A is similar to the TimeBehaviorAtom record as specified in the second table titled "TimeBehaviorAtom record A child-record hierarchy" in this section. The **ClientVisualElementContainer** record B specifies that the target of the animation is the shape.

**stringList.string.stringValue:** "style.visibility" specifies the property to be animated that controls the visibility of the shape.

## Shape Client Data

The following sections provide examples of a [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) anchor, a [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2), a shape text body, an [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096), and an external video.

### Shape Anchor

This example shows how to locate the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) anchor for the title [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2) on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 6 as shown in figure titled "Presentation slide 6" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the **DrawingContainer** (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f))record A from the table titled "SlideContainer record U child-record hierarchy" in section [3.5.2](#Section_cb3376a86bd64c62b579081eef2195b5) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00007B58 | 0423 | DrawingContainer **- drawing** |
| 00007B58 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 00007B60 | 041B | OfficeArtDgContainer **- OfficeArtDg** |
| 00007B60 | 0008 | OfficeArtRecordHeader **- rh** |
| 00007B68 | 0010 | OfficeArtFDG **- drawingData** |
| 00007B78 | 03B3 | OfficeArtSpgrContainer **- groupShape** |
| 00007B78 | 0008 | OfficeArtRecordHeader **- rh** |
| 00007B80 | 0030 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007BB0 | 0080 | **A**: OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007C30 | 0109 | **B**: OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007D39 | 00F7 | **C**: OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007E30 | 00FB | **D**: OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007F2B | 0050 | OfficeArtSpContainer **- shape** |

Figure 145: DrawingContainer child-record hierarchy

The child-record hierarchy of the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14)record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00007BB0 | 0080 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007BB0 | 0008 | OfficeArtRecordHeader **- rh** |
| 00007BB8 | 0010 | OfficeArtFSP **- shapeProp** |
| 00007BC8 | 002C | OfficeArtFOPT **- shapePrimaryOptions** |
| 00007BF4 | 0010 | **A**: [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |
| 00007C04 | 0018 | **B**: [OfficeArtClientData](#Section_ac3b454db5ea4da8a57c32fc08ed332a) **- clientData** |
| 00007C1C | 0014 | **C**: [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) **- clientTextbox** |

Figure 146: OfficeArtSpContainer child-record hierarchy

The child-record hierarchy of the OfficeArtClientAnchor record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007BF4 | 0010 | **A**: OfficeArtClientAnchor **- clientAnchor** |  |
| 00007BF4 | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007BF4 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007BF4 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007BF6 | 0002 | unsigned integer **- recType** | 0xF010 |
| 00007BF8 | 0004 | unsigned integer **- recLen** | 0x00000008 |
| 00007BFC | 0008 | [OfficeArtClientAnchorData](#Section_beecde28e2394d88b92c6e9dcf031e39) **- clientAnchorData** |  |
| 00007BFC | 0008 | [SmallRectStruct](#Section_e47cb9738480499590b2008bcb2ffc65) **- case of 0x00000008** |  |
| 00007BFC | 0002 | signed integer **- top** | 0x00AD |
| 00007BFE | 0002 | signed integer **- left** | 0x0120 |
| 00007C00 | 0002 | signed integer **- right** | 0x1560 |
| 00007C02 | 0002 | signed integer **- bottom** | 0x037D |

Figure 147: OfficeArtClientAnchor record A child-record hierarchy

**rh.recLen:** 0x00000008 specifies that a SmallRectStruct record is contained in **clientAnchorData**.

**clientAnchorData.case of 0x00000008.top:** 0x00AD specifies the minimum *y*-value of the rectangle.

**clientAnchorData.case of 0x00000008.left:** 0x0120 specifies the minimum *x*-value of the rectangle.

**clientAnchorData.case of 0x00000008.right:** 0x1560 specifies the maximum *x*-value of the rectangle.

**clientAnchorData.case of 0x00000008.bottom:** 0x037D specifies the maximum *y*-value of the rectangle.

### Shape Placeholder

This example shows how to locate the title [**placeholder**](#gt_25caffec-4e4b-4192-a04d-edcd14f0ec5f) [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 6 as shown in figure titled "Presentation slide 6" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the [OfficeArtClientData](#Section_ac3b454db5ea4da8a57c32fc08ed332a) record B from the second table titled "OfficeArtSpContainer child-record hierarchy" in section [3.8.1](#Section_d959807b3d3041dda5c4c914f4f5098c) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007C04 | 0018 | **B**: OfficeArtClientData **- clientData** |  |
| 00007C04 | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007C0C | 0010 | [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) **- placeholderAtom** |  |
| 00007C0C | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00007C14 | 0004 | signed integer **- position** | 0x00000000 |
| 00007C18 | 0001 | [PlaceholderEnum](#Section_dbfd04be077644d9b408b07f4c951eaf) **- placementId** | 0x0D |
| 00007C19 | 0001 | [PlaceholderSize](#Section_557f629693464db5bdc05acbc5a33617) **- size** | 0x00 |

Figure 148: OfficeArtClientData record B child-record hierarchy

**placeholderAtom.position:** 0x00000000 specifies the identifier for the [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2).

**placeholderAtom.placementId:** 0x0D specifies that this placeholder shape is a title text placeholder shape.

The child-record hierarchy of the [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record C from the second table titled "OfficeArtSpContainer child-record hierarchy" in section 3.8.1 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007C1C | 0014 | **C**: OfficeArtClientTextbox **- clientTextbox** |  |
| 00007C1C | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007C24 | 000C | [OutlineTextRefAtom](#Section_f120afe11b654deca2cec5f90fe8b317) **- case of RT\_OutlineTextRefAtom** |  |
| 00007C24 | 0008 | RecordHeader **- rh** |  |
| 00007C24 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007C24 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007C26 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0F9E |
| 00007C28 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 00007C2C | 0004 | signed integer **- index** | 0x00000000 |

Figure 149: OfficeArtClientTextbox child-record hierarchy

**case of RT\_OutlineTextRefAtom:** specifies a reference to text contained in the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)).

**case of RT\_OutlineTextRefAtom.index:** 0x00000000 specifies the index into the sequence of the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) records that follows the slide persist record. This specifies record O in the table titled "SlideListWithTextContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690). The table titled "Outline TextBytesAtom record O" in section 3.4 shows record O expanded. The contained text "shapes with text" is specified by record P in the table titled "SlideListWithTextContainer child-record hierarchy" in section 3.4, and is shown expanded in the table titled "Outline TextBytesAtom record P" in section 3.4.

### Shape Text

This example shows how to locate the text of the triangle [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 6 as shown in figure titled "Presentation slide 6" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) record C from the table titled "DrawingContainer child-record hierarchy" in section [3.8.1](#Section_d959807b3d3041dda5c4c914f4f5098c) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00007D39 | 00F7 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00007D39 | 0008 | OfficeArtRecordHeader **- rh** |
| 00007D41 | 0010 | OfficeArtFSP **- shapeProp** |
| 00007D51 | 0044 | OfficeArtFOPT **- shapePrimaryOptions** |
| 00007D95 | 000E | OfficeArtTertiaryFOPT **- shapeTertiaryOptons** |
| 00007DA3 | 0010 | [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |
| 00007DB3 | 007D | **A**: [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) **- clientTextbox** |

Figure 24: OfficeArtSpContainer child-record hierarchy

The child-record hierarchy of the OfficeArtClientTextbox record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007DB3 | 007D | OfficeArtClientTextbox **- clientTextbox** |  |
| 00007DB3 | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007DB3 | 4 bits | unsigned integer **- recVer** | 0xF |
| 00007DB3 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007DB5 | 0002 | unsigned integer **- recType** | 0xF00D |
| 00007DB7 | 0004 | unsigned integer **- recLen** | 0x00000075 |
| 00007DBB | 000C | **A**: [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) **- case of RT\_TextHeaderAtom** |  |
| 00007DC7 | 0019 | **B**: [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) **- case of RT\_TextBytesAtom** |  |
| 00007DE0 | 0050 | [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) **- case of RT\_StyleTextPropAtom** |  |

Figure 25: OfficeArtClientTextbox child-record hierarchy

The child-record hierarchy of the TextHeaderAtomrecord A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007DBB | 000C | **A**: TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 00007DBB | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00007DBB | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007DBB | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007DBD | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0F9F |
| 00007DBF | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 00007DC3 | 0004 | [TextTypeEnum](#Section_50118cd348c243299a406a0281e960b6) **- textType** | 0x00000004 |

Figure 26: TextHeaderAtom record A child-record hierarchy

**textType:** 0x00000004 specifies that the body of text is type Tx\_TYPE\_OTHER.

The child-record hierarchy of the TextBytesAtom record B from the table titled "OfficeArtClientTextbox child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007DC7 | 0019 | **B**: TextBytesAtom **- case of RT\_TextBytesAtom** |  |
| 00007DC7 | 0008 | RecordHeader **- rh** |  |
| 00007DC7 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007DC7 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007DC9 | 0002 | RecordType **- recType** | 0x0FA8 |
| 00007DCB | 0004 | unsigned integer **- recLen** | 0x00000011 |
| 00007DCF | 0011 | array of bytes **- textBytes** | a \vbold\v triangle |

Figure 27: TextBytesAtom record B child-record hierarchy

**textBytes:** "a \vbold\v triangle" specifies the characters of the text body.

### OLE Object

This example shows how to locate the pie chart on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 5 as shown in figure titled "Presentation slide 5" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the **DrawingContainer** (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f))record A from the table titled "SlideContainer record J child-record hierarchy" in section [3.5.2](#Section_cb3376a86bd64c62b579081eef2195b5) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00003EAB | 01B8 | DrawingContainer **- drawing** |
| 00003EAB | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 00003EB3 | 01B0 | OfficeArtDgContainer **- OfficeArtDg** |
| 00003EB3 | 0008 | OfficeArtRecordHeader **- rh** |
| 00003EBB | 0010 | OfficeArtFDG **- drawingData** |
| 00003ECB | 0148 | OfficeArtSpgrContainer **- groupShape** |
| 00003ECB | 0008 | OfficeArtRecordHeader **- rh** |
| 00003ED3 | 0030 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00003F03 | 007A | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00003F7D | 0096 | **A**: OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00004013 | 0050 | OfficeArtSpContainer **- shape** |

Figure 28: OfficeArtSpContainer child-record hierarchy

The child-record hierarchy of the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00003F7D | 0096 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00003F7D | 0008 | OfficeArtRecordHeader **- rh** |
| 00003F85 | 0010 | OfficeArtFSP **- shapeProp** |
| 00003F95 | 004A | OfficeArtFOPT **- shapePrimaryOptions** |
| 00003FDF | 0010 | [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |
| 00003FEF | 0024 | **A**: [OfficeArtClientData](#Section_ac3b454db5ea4da8a57c32fc08ed332a) **- clientData** |

Figure 29: OfficeArtSpContainer child-record hierarchy

The child-record hierarchy of the **OfficeArtClientData** (section 2.7.3) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00003FEF | 0024 | **A**: OfficeArtClientData **- clientData** |  |
| 00003FEF | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00003FF7 | 000C | [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f) **- exObjRefAtom** |  |
| 00003FF7 | 0008 | RecordHeader **- rh** |  |
| 00003FFF | 0004 | unsigned integer **- exObjIdRef** | 0x00000014 |
| 00004003 | 0010 | [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) **- placeholderAtom** |  |

Figure 30: OfficeArtClientData record A child-record hierarchy

**exObjRefAtom.exObjIdRef:** 0x00000014 specifies the identifier reference to the [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d) in the **ExObjListContainer** record (section [2.10.1](#Section_3b997d4d79514478acc51c9adbc2627a)) at the document level.

The child-record hierarchy of the **ExObjListContainer** record F from the table titled "DocumentContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005CA1 | 0152 | ExObjListContainer **- exObjList** |  |
| 00005CA1 | 0008 | RecordHeader **- rh** |  |
| 00005CA9 | 000C | [ExObjListAtom](#Section_ebd9be5b3df44c2c99ba84923f01a322) **- exObjListAtom** |  |
| 00005CB5 | 00A2 | [ExOleEmbedContainer](#Section_c687090ca3594ffc918e415117e10229) **- case of RT\_ExternalOleEmbed** |  |
| 00005CB5 | 0008 | RecordHeader **- rh** |  |
| 00005CB5 | 4 bits | unsigned integer **- recVer** | 0xF |
| 00005CB5 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00005CB7 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0FCC |
| 00005CB9 | 0004 | unsigned integer **- recLen** | 0x0000009A |
| 00005CBD | 0010 | **A**: [ExOleEmbedAtom](#Section_003441ca0e10403b92c3ebcd7fcc6a07) **- exOleEmbedAtom** |  |
| 00005CCD | 0020 | **B**: [ExOleObjAtom](#Section_a35170168e3245859a42adae02eea798) **- exOleObjAtom** |  |
| 00005CED | 0012 | **C**: [MenuNameAtom](#Section_39e69a141c4649deaab4ac78485c6de1) **- menuNameAtom** |  |
| 00005CFF | 0026 | **D**: [ProgIDAtom](#Section_4bfdd228254e40aba4970e0407079fd0) **- progIdAtom** |  |
| 00005D25 | 0032 | **E**: [ClipboardNameAtom](#Section_203232fa72dd465b81cd48cda50d3865) **- clipboardNameAtom** |  |
| 00005D57 | 003E | **F**: [ExMCIMovieContainer](#Section_e6094ce87fb74c91aa111a02f1ee03d8) **- case of RT\_ExternalMciMovie** |  |
| 00005D95 | 005E | **H**: [ExHyperlinkContainer](#Section_3145d686e4e34eb2849f03c4cf410d42) **- case of RT\_ExternalHyperlink** |  |

Figure 31: ExObjListContainer child-record hierarchy

The child-record hierarchy of the ExOleEmbedAtom record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005CBD | 0010 | **A**: ExOleEmbedAtom **- exOleEmbedAtom** |  |
| 00005CBD | 0008 | RecordHeader **- rh** |  |
| 00005CC5 | 0004 | [ExColorFollowEnum](#Section_ebecbab3a3e34877a3bffabc10d90432) **- exColorFollow** | 0x00000001 |
| 00005CC9 | 0001 | unsigned integer **- fCantLockServer** | 0x00 |
| 00005CCA | 0001 | unsigned integer **- fNoSizeToServer** | 0x00 |
| 00005CCB | 0001 | unsigned integer **- fIsTable** | 0x00 |

Figure 32: ExOleEmbedAtom record A child-record hierarchy

**exColorFollow:** 0x00000001 specifies that the [**OLE object**](#gt_cdff9514-a3fb-4897-941d-4e99193a0096) follows the [**color scheme**](#gt_b0feeac6-f711-4ed7-b8c6-3a490734a9e5).

**fCantLockServer:** 0x00 specifies that the [**OLE**](#gt_171744b8-3f44-4198-b7b9-1c0147282d2c) server can be locked.

**fNoSizeToServer:** 0x00 specifies that sending dimensions to the OLE server is required.

**fIsTable:** 0x00 specifies that the OLE object is not a table.

The child-record hierarchy of the **ExOleObjAtom** (section 2.10.12)record B from the table titled "ExObjListContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005CCD | 0020 | **B**: ExOleObjAtom **- exOleObjAtom** |  |
| 00005CCD | 0008 | RecordHeader **- rh** |  |
| 00005CD5 | 0004 | DataViewAspectEnum **- drawAspect** | 0x00000001 |
| 00005CD9 | 0004 | [ExOleObjTypeEnum](#Section_e71fc7fb94a64feab7e657ddf07800bd) **- type** | 0x00000000 |
| 00005CDD | 0004 | unsigned integer **- exObjId** | 0x00000014 |
| 00005CE1 | 0004 | [ExOleObjSubTypeEnum](#Section_9851ea47c044476a93026904de72d279) **- subType** | 0x00000004 |
| 00005CE5 | 0004 | [PersistIdRef](#Section_7fbfdcc25bb148eeb886357d39fce18f) **- persistIdRef** | 0x00000007 |
| 00005CE9 | 0004 | BOOL **- unused** | 0x00139600 |

Figure 33: ExOleObjAtom record B child-record hierarchy

**drawAspect:** 0x00000001 specifies that it is preferable to display the OLE object as an embedded object inside of the container document.

**type:** 0x00000000 specifies that this OLE object is serialized and saved with the document.

**exObjId:** 0x00000014 specifies the identifier of this OLE object.

**subType:** 0x00000004 specifies that the OLE object is created by ProgID "MSGraph.Chart" or "MSGraph".

**persistIdRef:** 0x00000007 specifies the value to look up in the [**persist object directory**](#gt_1e7966e2-aed7-41a2-a5c9-fe3aaafd5fb1), shown in the second table in section [3.2](#Section_5bda800966124679a6eb6fb83cbcf195), to find the [**persist object**](#gt_be39f9c5-1e9b-418a-9527-10e241105b68) stream offset 0x00004D69. This offset matches the offset for the **ExOleObjStg** (section [2.10.34](#Section_21e29c16df3a435280172c48864d2548)) record P in the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section [3.3](#Section_7bd57959d49c48a1940abde37ec93c6f). This **ExOleObjStg** record represents the OLE object as shown in figure titled "Presentation slide 5" in section 3.1.

The child-record hierarchy of the **ExOleObjStg** record P from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section 3.3 is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00004D69 | 0E88 | **P**: ExOleObjStg |  |
| 00004D69 | 0E88 | [ExOleObjStgCompressedAtom](#Section_305e541f2c9149c5a7424955330fd2b9) **- case of 1** |  |
| 00004D69 | 0008 | RecordHeader **- rh** |  |
| 00004D69 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00004D69 | 12 bits | unsigned integer **- recInstance** | 0x001 |
| 00004D6B | 0002 | RecordType **- recType** | 0x1011 |
| 00004D6D | 0004 | unsigned integer **- recLen** | 0x00000E80 |
| 00004D71 | 0004 | unsigned integer **- decompressedSize** | 0x00006A00 |
| 00004D75 | 0E7C | array of bytes **- oleStgCompressed** | 78 9C ED 5C 7B 70 94 D5 15 ... |

Figure 34: ExOleObjStg record P child-record hierarchy

**case of 1.rh.recInstance:** 0x001 specifies that this is an ExOleObjStgCompressedAtom record.

**case of 1.decompressedSize:** 0x00006A00 specifies that the storage length is 0x00006A00 bytes after decompression.

**case of 1.oleStgCompressed:** 78 9C ED 5C 7B 70 94 D5 15 ... specifies the array data of the compressed OLE object.

The child-record hierarchy of the MenuNameAtomrecord C from the table titled "ExObjListContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005CED | 0012 | **C**: MenuNameAtom **- menuNameAtom** |  |
| 00005CED | 0008 | RecordHeader **- rh** |  |
| 00005CED | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00005CED | 12 bits | unsigned integer **- recInstance** | 0x001 |
| 00005CEF | 0002 | RecordType **- recType** | 0x0FBA |
| 00005CF1 | 0004 | unsigned integer **- recLen** | 0x0000000A |
| 00005CF5 | 000A | [PrintableUnicodeString](#Section_7b3104aabe314358b31039775872b257) **- menuName** | Chart |

Figure 35: MenuNameAtom record C child-record hierarchy

**menuName:** "Chart" specifies the short name of the OLE object.

The child-record hierarchy of the ProgIDAtomrecord D from the table titled "ExObjListContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005CFF | 0026 | **D**: ProgIDAtom **- progIdAtom** |  |
| 00005CFF | 0008 | RecordHeader **- rh** |  |
| 00005CFF | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00005CFF | 12 bits | unsigned integer **- recInstance** | 0x002 |
| 00005D01 | 0002 | RecordType **- recType** | 0x0FBA |
| 00005D03 | 0004 | unsigned integer **- recLen** | 0x0000001E |
| 00005D07 | 001E | PrintableUnicodeString **- progId** | MSGraph.Chart.8 |

Figure 36: ProgIDAtom record D child-record hierarchy

**progId:** "MSGraph.Chart.8" specifies the **ProgID** of the OLE object.

The child-record hierarchy of the ClipboardNameAtomrecord E from the table titled "ExObjListContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005D25 | 0032 | **E**: ClipboardNameAtom **- clipboardNameAtom** |  |
| 00005D25 | 0008 | RecordHeader **- rh** |  |
| 00005D25 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00005D25 | 12 bits | unsigned integer **- recInstance** | 0x003 |
| 00005D27 | 0002 | RecordType **- recType** | 0x0FBA |
| 00005D29 | 0004 | unsigned integer **- recLen** | 0x0000002A |
| 00005D2D | 002A | PrintableUnicodeString **- clipboardName** | Microsoft Graph Chart |

Figure 37: ClipboardNameAtom record E child-record hierarchy

**clipboardName:** "Microsoft Graph Chart" specifies the long name of the OLE object.

### External Video

This example shows how to locate the external video object on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 4 as shown in figure titled "Presentation slide 4" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The child-record hierarchy of the **DrawingContainer** (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)) record A from the table titled "SlideContainer record I child-record hierarchy" in section [3.5.2](#Section_cb3376a86bd64c62b579081eef2195b5) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 000037DD | 01BA | DrawingContainer **- drawing** |
| 000037DD | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 000037E5 | 01B2 | OfficeArtDgContainer **- OfficeArtDg** |
| 000037E5 | 0008 | OfficeArtRecordHeader **- rh** |
| 000037ED | 0010 | OfficeArtFDG **- drawingData** |
| 000037FD | 014A | OfficeArtSpgrContainer **- groupShape** |
| 000037FD | 0008 | OfficeArtRecordHeader **- rh** |
| 00003805 | 0030 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00003835 | 007A | **A**: OfficeArtSpContainer **- case of msofbtSpContainer** |
| 000038AF | 0098 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00003947 | 0050 | OfficeArtSpContainer **- shape** |

Figure 38: DrawingContainer child-record hierarchy

The child-record hierarchy of the OfficeArtSpContainer ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000038AF | 0098 | **A**: OfficeArtSpContainer **- case of msofbtSpContainer** |  |
| 000038AF | 0008 | OfficeArtRecordHeader **- rh** |  |
| 000038B7 | 0010 | OfficeArtFSP **- shapeProp** |  |
| 000038C7 | 002C | OfficeArtFOPT **- shapePrimaryOptions** |  |
| 000038F3 | 0010 | [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |  |
| 00003903 | 0044 | [OfficeArtClientData](#Section_ac3b454db5ea4da8a57c32fc08ed332a) **- clientData** |  |
| 00003903 | 0008 | OfficeArtRecordHeader **- rh** |  |
| 0000390B | 000C | [ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f) **- exObjRefAtom** |  |
| 0000390B | 0008 | RecordHeader **- rh** |  |
| 00003913 | 0004 | unsigned integer **- exObjIdRef** | 0x0000001B |
| 00003917 | 0020 | [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) **- mouseClickInteractiveInfo** |  |
| 00003937 | 0010 | [PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) **- placeholderAtom** |  |

Figure 39: OfficeArtSpContainer record A child-record hierarchy

**clientData.exObjRefAtom.exObjIdRef:** 0x0000001B specifies a reference to an [**external object**](#gt_0bd55118-e6b5-4f5a-ba58-bf62626eed9d) with **exObjId** value 0x0000001B in the **ExObjListContainer** record (section [2.10.1](#Section_3b997d4d79514478acc51c9adbc2627a)) at the document level.

The **ExObjListContainer** record is shown as record F in the table titled "DocumentContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690), and is shown expanded in the table titled "ExObjListContainer child-record hierarchy" in this section. The child-record hierarchy of [ExMCIMovieContainer](#Section_e6094ce87fb74c91aa111a02f1ee03d8) record H is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005D57 | 003E | **H**: ExMCIMovieContainer **- case of RT\_ExternalMciMovie** |  |
| 00005D57 | 0008 | RecordHeader **- rh** |  |
| 00005D57 | 4 bits | unsigned integer **- recVer** | 0xF |
| 00005D57 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00005D59 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x1007 |
| 00005D5B | 0004 | unsigned integer **- recLen** | 0x00000036 |
| 00005D5F | 0036 | [ExVideoContainer](#Section_342b66efd81d45c0aad3414545cb7ae4) **- exVideo** |  |
| 00005D5F | 0008 | RecordHeader **- rh** |  |
| 00005D67 | 0010 | [ExMediaAtom](#Section_3239ce9f932f4e4f8299333e907a6ccc) **- exMediaAtom** |  |
| 00005D67 | 0008 | RecordHeader **- rh** |  |
| 00005D6F | 0004 | unsigned integer **- exObjId** | 0x0000001B |
| 00005D73 | 0002 | unsigned integer **- fLoop** | 0x0000 |
| 00005D73 | 0002 | unsigned integer **- fRewind** | 0x0000 |
| 00005D73 | 0002 | unsigned integer **- fNarration** | 0x0000 |
| 00005D73 | 0002 | unsigned integer **- reserved** | 0x0000 |
| 00005D77 | 001E | [UncOrLocalPathAtom](#Section_b376f887227b4f538600fa036403ce05) **- videoFilePathAtom** |  |
| 00005D77 | 0008 | RecordHeader **- rh** |  |
| 00005D7F | 0016 | [UncOrLocalPath](#Section_dd863c41d58d487381f39a6cb84a718c) **- path** | C:\Bear.wmv |

Figure 40: ExMCIMovieContainer record H child-record hierarchy

**exVideo.exMediaAtom.exObjId:** 0x0000001B specifies the identifier of the external object. It matches the value of the **exObjRefAtom.exObjIdRef** field in the table titled "OfficeArtSpContainer record A child-record hierarchy" in this section.

**exVideo.exMediaAtom.fLoop:** 0x0000 specifies that the video data is not repeated continuously.

**exVideo.exMediaAtom.fRewind:** 0x0000 specifies that the video data is not rewound after playing.

**exVideo.exMediaAtom.fNarration:** 0x0000 specifies that the video data is not recorded narration for the [**slide show**](#gt_340561a9-dc0c-42ad-ab6f-7b6d854d3c1b).

**exVideo.videoFilePathAtom.path:** "C:\Bear.wmv" specifies the local path string to the video file.

## Text

The following sections provide examples of paragraph-level text formatting, character-level text formatting, interactive text, and text metacharacters.

### Paragraph Formatting

Paragraph-level formatting is stored separately from the text characters.

The most basic paragraph-level formatting for a body of text is specified in the [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) record. The following sample shows a section of the **SlideListWithTextContainer** record (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)) pertaining to [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 1 and presentation slide 2. (The complete hierarchy of the **SlideListWithTextContainer** record is shown in the table titled "SlideListWithTextContainer child-record hierarchy" in section [3.4](#Section_0d75c31791f747958e6941dde73f9690).)

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 000066A0 | 001C | [SlidePersistAtom](#Section_48dce41296924f93aeb73d9fdd3a0a5a) **- case of RT\_SlidePersistAtom A** |  |
| 000066BC | 000C | [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) **- case of RT\_TextHeaderAtom A** |  |
| 000066C8 | 0010 | [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) **- case of RT\_TextBytesAtom A** |  |
| 000066D8 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom B** |  |
| 000066E4 | 0014 | TextBytesAtom **- case of RT\_TextBytesAtom B** |  |
| 000066F8 | 001C | SlidePersistAtom **- case of RT\_SlidePersistAtom B** |  |
| 00006714 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom C** |  |
| 00006714 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00006714 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006714 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006716 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0F9F |
| 00006718 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 00006720 | 0013 | TextBytesAtom **- case of RT\_TextBytesAtom C** |  |
| 00006720 | 0008 | RecordHeader **- rh** |  |
| 00006728 | 000B | array of bytes **- textBytes** | the weather |
| 00006733 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom D** |  |
| 00006733 | 0008 | RecordHeader **- rh** |  |
| 00006733 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00006733 | 12 bits | unsigned integer **- recInstance** | 0x001 |
| 00006735 | 0002 | RecordType **- recType** | 0x0F9F |
| 00006737 | 0004 | unsigned integer **- recLen** | 0x00000004 |
| 0000673B | 0004 | [TextTypeEnum](#Section_50118cd348c243299a406a0281e960b6) **- textType** | 0x00000001 |
| 0000673F | 0031 | TextBytesAtom **- case of RT\_TextBytesAtom D** |  |
| 0000673F | 0008 | RecordHeader **- rh** |  |
| 0000673F | 4 bits | unsigned integer **- recVer** | 0x0 |
| 0000673F | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00006741 | 0002 | RecordType **- recType** | 0x0FA8 |
| 00006743 | 0004 | unsigned integer **- recLen** | 0x00000029 |
| 00006747 | 0029 | array of bytes **- textBytes** | a sunny day\rthe blue sky\rsome green grass |
| 00006770 | 0022 | **A**: StyleTextPropAtom **- styleTextPropAtom** |  |

Figure 41: Basic paragraph-level formatting for placeholder text

The preceding sample shows how the text and basic paragraph-level formatting for the content placeholder on presentation slide 2 of the sample presentation are specified.

**case of RT\_SlidePersistAtom B:** The second **SlidePersistAtom** record (section 2.4.14.5) in the **SlideListWithTextContainer** record specifies presentation slide 2. The records that follow specify the text for placeholders on this slide.

**case of RT\_TextHeaderAtom C:**  Specifies the title [**placeholder shape**](#gt_f96b009a-28cd-4809-a863-14ffb6a891d2). The **rh.recInstance** value of 0x000 specifies that this text is the first text body on presentation slide 2.

**case of RT\_TextHeaderAtom D:**  Specifies a new body of text. The **rh.recInstance** value of 0x001 specifies that this text is the second text body for presentation slide 2. The records that follow specify additional properties for this text body.

**case of RT\_TextHeaderAtom D.textType:** 0x00000001 specifies that the text type is Tx\_TYPE\_BODY, the body placeholder shape text.

**case of RT\_TextBytesAtom D:** Specifies the characters of the text. The quantity of characters specified is 41. Therefore, the length of the text is 42 because of the terminating line break character.

**styleTextPropAtom:** Specifies the text formatting.

The child-record hierarchy of the StyleTextPropAtomrecord A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00006770 | 0022 | StyleTextPropAtom **- case of RT\_StyleTextPropAtom** |
| 00006770 | 0008 | RecordHeader **- rh** |
| 00006778 | 0012 | **A**: [TextPFRun](#Section_4e95a4f9a9af42b5b81af8f991cb1418) **- textPFRun** |
| 0000678A | 0008 | [TextCFRun](#Section_426f313aa4f34ffba0419a74ccf23f17) **- textCFRun** |

Figure 42: StyleTextPropAtom child-record hierarchy

**textPFRun:** Specifies the paragraph-level formatting for a single range of text. There is only one TextPFRunin the StyleTextPropAtom record because all of the individual bulleted paragraphs share the same paragraph-level properties.

The child-record hierarchy of the TextPFRunrecord A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006778 | 0012 | TextPFRun **- textPFRun** |  |
| 00006778 | 0004 | unsigned integer **- count** | 0x0000002A |
| 0000677C | 0002 | unsigned integer **- indentLevel** | 0x0000 |
| 0000677E | 000C | [TextPFException](#Section_c15a13b3db2c4b50a7e608045581a663) **- pf** |  |
| 0000677E | 0004 | **A**: [PFMasks](#Section_2a02831a088b44e784c9c185ab314a71) **- masks** |  |
| 00006782 | 0002 | **B**: [BulletFlags](#Section_06ef8761a2344e81892f3d4a2f789529) **- bulletFlags** |  |
| 00006784 | 0002 | signed integer **- bulletSize** | 0x0032 |
| 00006786 | 0004 | [ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) **- bulletColor** |  |

Figure 43: TextPFRun child-record hierarchy

**count:** 0x0000002A specifies that **textPFRun** applies to 42 characters.

**indentLevel:** 0x0000 specifies the indent level of the paragraphs.

**pf:** Specifies the basic paragraph-level formatting options for this run.

**pf.masks:** Specifies which fields of **pf** exist or are valid.

**pf.bulletFlags:** Specifies whether the run has certain paragraph-level properties. This field exists because **masks.bulletHasSize** is set. The **masks** field is expanded in the following table.

**pf.bulletSize:** 0x0032 specifies the bullet size. This field exists because **masks.bulletSize** is set.

**pf.bulletColor:** Specifies the bullet color. This field exists because **masks.bulletColor** is set.

The child-record hierarchy of the PFMasksrecord A from the table titled "TextPFRun child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000677E | 0004 | PFMasks **- masks** |  |
| 0000677E | 1 bit | unsigned integer **- hasBullet** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletHasFont** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletHasColor** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletHasSize** | 0x1 |
| 0000677E | 1 bit | unsigned integer **- bulletFont** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletColor** | 0x1 |
| 0000677E | 1 bit | unsigned integer **- bulletSize** | 0x1 |
| 0000677E | 1 bit | unsigned integer **- bulletChar** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- leftMargin** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- unused** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- indent** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- align** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- lineSpacing** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- spaceBefore** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- spaceAfter** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- defaultTabSize** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- fontAlign** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- charWrap** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- wordWrap** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- overflow** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- tabStops** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- textDirection** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- reserved1** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletBlip** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletScheme** | 0x0 |
| 0000677E | 1 bit | unsigned integer **- bulletHasScheme** | 0x0 |
| 0000677E | 6 bits | unsigned integer **- reserved2** | 0x00 |

Figure 44: PFMasks contents

**bulletHasSize:** 0x00000001 specifies that the **bulletFlags** field of the TextPFException shown in the table titled "TextPFRun child-record hierarchy" in this section exists.

**bulletColor:** 0x00000001 specifies that the **bulletColor** field of the TextPFException shown in the table titled "TextPFRun child-record hierarchy" in this section exists.

**bulletSize:** 0x00000001 specifies that the **bulletSize** field of the TextPFException shown in the table titled "TextPFRun child-record hierarchy" in this section exists.

The child-record hierarchy of the BulletFlagsrecord B from the table titled "TextPFRun child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00006782 | 0002 | BulletFlags **- bulletFlags** |  |
| 00006782 | 1 bit | unsigned integer **- fHasBullet** | 0x1 |
| 00006782 | 1 bit | unsigned integer **- fBulletHasFont** | 0x0 |
| 00006782 | 1 bit | unsigned integer **- fBulletHasColor** | 0x0 |
| 00006782 | 1 bit | unsigned integer **- fBulletHasSize** | 0x1 |
| 00006782 | 12 bits | unsigned integer **- reserved** | 0x000 |

Figure 45: BulletFlags contents

**fHasBullet:** 0x0001 specifies that a bullet exists.

**fBulletHasSize:** 0x0001 specifies that the **bulletSize** field of the TextPFException shown in the table titled "TextPFRun child-record hierarchy" in this section is valid.

The following example shows how additional paragraph-level formatting is specified. The following [OutlineTextProps2.9.61Entry](#Section_e0d2c3b5c038439caaaee778a1c36c71) record is located in the [OutlineTextProps2.9.60Container](#Section_6eb16c7f6b6848dbace37347326b3a9d) record contained in the [PP2.4.23.5DocBinaryTagExtension](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0) record shown in the table titled "PP9DocBinaryTagExtension child-record hierarchy" in section [3.6.1](#Section_a0d30ef4e45f45158a66b1368a3eee13).

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000664A | 0026 | OutlineTextProps9Entry **- outlineTextProps9Entry** |  |
| 0000664A | 0010 | [OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) **- outlineTextHeaderAtom** |  |
| 0000664A | 0008 | RecordHeader **- rh** |  |
| 0000664A | 4 bits | unsigned integer **- recVer** | 0x0 |
| 0000664A | 12 bits | unsigned integer **- recInstance** | 0x001 |
| 0000664C | 0002 | RecordType **- recType** | 0x0FAF |
| 0000664E | 0004 | unsigned integer **- recLen** | 0x00000008 |
| 00006652 | 0004 | [SlideIdRef](#Section_74a76957a2534455b8a4f82e650808fb) **- slideIdRef** | 0x00000101 |
| 00006656 | 0004 | TextTypeEnum **- txType** | 0x00000001 |
| 0000665A | 0016 | [StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f) **- styleTextProp9Atom** |  |
| 0000665A | 0008 | RecordHeader **- rh** |  |
| 00006662 | 000E | [StyleTextProp9](#Section_fb67da927dd849649e44b8b92291ee87) **- styleTextProps9** |  |
| 00006662 | 0006 | [TextPFException9](#Section_3e80f159dab6415da40918ea6975b0c9) **- pf9** |  |
| 00006662 | 0004 | PFMasks **- masks** |  |
| 00006666 | 0002 | signed integer **- bulletBlipRef** | 0x0000 |
| 00006668 | 0004 | [TextCFException9](#Section_589af75ae0c34592b1f29471a0fa24a3) **- cf9** |  |
| 0000666C | 0004 | [TextSIException](#Section_c4be3fe8ac2d42b485bb2647078f4c53) **- si** |  |

Figure 46: An OutlineTextProps9Entry that contains the additional paragraph-level properties for the content placeholder on presentation slide 2

The OutlineTextPropsHeaderExAtomspecifies the corresponding text to which this formatting applies. The **rh.recInstance** field of the OutlineTextPropsHeaderExAtomalong with the **slideIdRef** and **txType** fields are sufficient to find the corresponding text specified by a TextHeaderAtom record contained in the **SlideListWithTextContainer** record.

The OutlineTextProps2.9.61Entrycontains one StyleTextProp2.9.67Atom because there is only one run in the text. This is the case because all bits of the **fontStyle.pp9rt** fields of all [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) records contained in the TextCFRun records are equal. Therefore, the TextPFException2.9.26, TextCFException2.9.17, and TextSIException apply to the entire text. The TextCFException2.9.17 specifies that there is a custom graphical bullet for this placeholder.

**outlineTextHeaderAtom.rh.recInstance:** 0x001 specifies that these additional properties apply to the second text body for the presentation slide specified by the **slideIdRef** field.

**outlineTextHeaderAtom.slideIdRef:** 0x00000101 specifies the presentation slide that contains the text that has additional paragraph-level properties.

**outlineTextHeaderAtom.txType:** 0x00000001 specifies the type of text. This matches the **txType** field of the TextHeaderAtom shown in the table titled "Basic paragraph-level formatting for placeholder text" in this section.

**styleTextProp9Atom:** Specifies the additional paragraph-level properties.

**styleTextProp9Atom.styleTextProps9.pf9.bulletBlipRef:** 0x0000 specifies the picture to use as the bullet symbol.

### Character Formatting

This example shows how character-level formatting is specified for the green circular shape on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 6 as shown in figure titled "Presentation slide 6" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The text of the [**shape**](#gt_d0e38aa4-2c71-4a6f-b5e6-75766fa9409e) is specified in an [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) record. The child-record hierarchy of the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) record D from the table titled "DrawingContainer child-record hierarchy" in section [3.8.1](#Section_d959807b3d3041dda5c4c914f4f5098c) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007E30 | 00FB | OfficeArtSpContainer **- case of msofbtSpContainer** |  |
| 00007E30 | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007E38 | 0010 | OfficeArtFSP **- shapeProp** |  |
| 00007E48 | 0044 | OfficeArtFOPT **- shapePrimaryOptions** |  |
| 00007E8C | 000E | OfficeArtTertiaryFOPT **- shapeTertiaryOptions** |  |
| 00007E9A | 0010 | [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |  |
| 00007EAA | 0081 | OfficeArtClientTextbox **- clientTextbox** |  |
| 00007EAA | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007EB2 | 000C | [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) **- case of RT\_TextHeaderAtom** |  |
| 00007EBE | 001D | [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) **- case of RT\_TextBytesAtom** |  |
| 00007EBE | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00007EBE | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007EBE | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007EC0 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0FA8 |
| 00007EC2 | 0004 | unsigned integer **- recLen** | 0x00000015 |
| 00007EC6 | 0015 | array of bytes **- textBytes** | an \runderlined\rcircle |
| 00007EDB | 0050 | [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) **- case of RT\_StyleTextPropAtom** |  |
| 00007EDB | 0008 | RecordHeader **- rh** |  |
| 00007EE3 | 000C | [TextPFRun](#Section_4e95a4f9a9af42b5b81af8f991cb1418) **- textPFRun** |  |
| 00007EEF | 000E | **A**: [TextCFRun](#Section_426f313aa4f34ffba0419a74ccf23f17) **- TextCFRun A** |  |
| 00007EFD | 0010 | **B**: TextCFRun **- TextCFRun B** |  |
| 00007F0D | 000E | **C**: TextCFRun **- TextCFRun C** |  |
| 00007F1B | 0010 | **D**: TextCFRun **- TextCFRun D** |  |

Figure 47: OfficeArtSpContainer child-record hierarchy

**clientTextbox.case of RT\_TextBytesAtom.rh.recLen:** 0x00000015 specifies that the length of the corresponding text body is 22 because of the terminating line break character.

**clientTextbox.case of RT\_TextBytesAtom.textBytes:** "an \runderlined\rcircle" specifies the content of the text.

The basic character-level formatting is specified by four TextCFRun structures contained in the StyleTextPropAtom record that follows the TextBytesAtomrecord.

The child-record hierarchy of the TextCFRunrecord A from the previous table is shown expanded in the following table. The offset of the first TextCFRun depends on the paragraph-level formatting. When all TextPFRunrecords are read, the character-level formatting begins.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007EEF | 000E | **A**: TextCFRun **- textCFRun** |  |
| 00007EEF | 0004 | unsigned integer **- count** | 0x00000002 |
| 00007EF3 | 000A | [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) **- cf** |  |
| 00007EF3 | 0004 | [CFMasks](#Section_bbca8581d0114293a375b209523cf962) **- masks** |  |
| 00007EF3 | 1 bit | unsigned integer **- bold** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- italic** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- underline** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- unused1** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- shadow** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- fehint** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- unused2** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- kumi** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- unused3** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- emboss** | 0x0 |
| 00007EF3 | 4 bits | unsigned integer **- fHasStyle** | 0x0 |
| 00007EF3 | 2 bits | unsigned integer **- unused4** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- typeface** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- size** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- color** | 0x1 |
| 00007EF3 | 1 bit | unsigned integer **- position** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- pp10ext** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- oldEATypeface** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- ansiTypeface** | 0x1 |
| 00007EF3 | 1 bit | unsigned integer **- symbolTypeface** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- newEATypeface** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- csTypeface** | 0x0 |
| 00007EF3 | 1 bit | unsigned integer **- pp11ext** | 0x0 |
| 00007EF3 | 5 bits | unsigned integer **- reserved** | 0x00 |
| 00007EF7 | 0002 | unsigned integer **- ansiFontRef** | 0x0000 |
| 00007EF9 | 0004 | [ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) **- color** |  |

Figure 48: TextCFRun record A child-record hierarchy

This TextCFRunspecifies only the font and font color for the first two characters, "an". The **fontStyle** field does not exist, because none of the bits of the CFMasks record that determine the existence of **fontStyle** are set.

**count:** 0x00000002 specifies that these character-level formatting options apply to two characters. The corresponding characters are "an".

**cf.masks.color:** 0x0001 specifies that **cf.color** exists.

**cf.masks.ansiTypeface:** 0x0001 specifies that **cf.ansiFontRef** exists.

**cf.ansiFontRef:** 0x0000 specifies the font. This field exists because **cf.masks.ansiTypeface** is set.

**cf.color:** Specifies the color of the font. This field exists because **cf.masks.color** is set.

So far, the sum of the **count** field of the TextCFRun records is 2.

The child-record hierarchy of the TextCFRunrecord B from the table titled "OfficeArtSpContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007EFD | 0010 | **B**: TextCFRun **- textCFRun** |  |
| 00007EFD | 0004 | unsigned integer **- count** | 0x00000002 |
| 00007F01 | 000C | TextCFException **- cf** |  |
| 00007F01 | 0004 | CFMasks **- masks** |  |
| 00007F01 | 1 bit | unsigned integer **- bold** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- italic** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- underline** | 0x1 |
| 00007F01 | 1 bit | unsigned integer **- unused1** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- shadow** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- fehint** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- unused2** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- kumi** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- unused3** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- emboss** | 0x0 |
| 00007F01 | 4 bits | unsigned integer **- fHasStyle** | 0x0 |
| 00007F01 | 2 bits | unsigned integer **- unused4** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- typeface** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- size** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- color** | 0x1 |
| 00007F01 | 1 bit | unsigned integer **- position** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- pp10ext** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- oldEATypeface** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- ansiTypeface** | 0x1 |
| 00007F01 | 1 bit | unsigned integer **- symbolTypeface** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- newEATypeface** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- csTypeface** | 0x0 |
| 00007F01 | 1 bit | unsigned integer **- pp11ext** | 0x0 |
| 00007F01 | 5 bits | unsigned integer **- reserved** | 0x00 |
| 00007F05 | 0002 | [CFStyle](#Section_3ea010b90ef94c059982618130ca66cd) **- fontStyle** |  |
| 00007F05 | 1 bit | unsigned integer **- bold** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- italic** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- underline** | 0x1 |
| 00007F05 | 1 bit | unsigned integer **- unused1** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- shadow** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- fehint** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- unused2** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- kumi** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- unused3** | 0x0 |
| 00007F05 | 1 bit | unsigned integer **- emboss** | 0x0 |
| 00007F05 | 4 bits | unsigned integer **- pp9rt** | 0x0 |
| 00007F05 | 2 bits | unsigned integer **- unused4** | 0x0 |
| 00007F07 | 0002 | unsigned integer **- ansiFontRef** | 0x0000 |
| 00007F09 | 0004 | ColorIndexStruct **- color** |  |

Figure 49: TextCFRun B child-record hierarchy

**count:** 0x00000002 specifies that these character-level formatting options apply to the next 2 characters, " \r".

**cf.masks.underline:** 0x0001 specifies that **cf.fontStyle** exists and that **cf.fontStyle.underline** is valid.

**cf.fontStyle:** Specifies styling options. This field exists because **cf.masks.underline** is set.

**cf.fontStyle.underline:** 0x0001 specifies that the text is underlined.

So far, the sum of the **count** field of the TextCFRun records is 4.

The child-record hierarchy of the TextCFRunrecord C from the table titled "OfficeArtSpContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007F0D | 000E | **C**: TextCFRun **- textCFRun** |  |
| 00007F0D | 0004 | unsigned integer **- count** | 0x0000000B |
| 00007F11 | 000A | TextCFException **- cf** |  |
| 00007F11 | 0004 | CFMasks **- masks** |  |
| 00007F11 | 1 bit | unsigned integer **- bold** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- italic** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- underline** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- unused1** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- shadow** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- fehint** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- unused2** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- kumi** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- unused3** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- emboss** | 0x0 |
| 00007F11 | 4 bits | unsigned integer **- fHasStyle** | 0x0 |
| 00007F11 | 2 bits | unsigned integer **- unused4** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- typeface** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- size** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- color** | 0x1 |
| 00007F11 | 1 bit | unsigned integer **- position** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- pp10ext** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- oldEATypeface** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- ansiTypeface** | 0x1 |
| 00007F11 | 1 bit | unsigned integer **- symbolTypeface** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- newEATypeface** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- csTypeface** | 0x0 |
| 00007F11 | 1 bit | unsigned integer **- pp11ext** | 0x0 |
| 00007F11 | 5 bits | unsigned integer **- reserved** | 0x00 |
| 00007F15 | 0002 | unsigned integer **- ansiFontRef** | 0x0000 |
| 00007F17 | 0004 | ColorIndexStruct **- color** |  |

Figure 50: TextCFRun C child-record hierarchy

The **fontStyle** field does not exist because none of the first 16 bits of the CFMasksrecord is set.

**count:** 0x0000000B specifies that these character-level properties apply to the next 11 characters, "underlined\r".

**cf.masks.underline:** 0x0000 specifies that the **underline** field of **fontStyle**, which does not exist in this TextCFRun, would not be valid.

So far, the sum of the **count** field of the TextCFRun records is 15.

The child-record hierarchy of the TextCFRunrecord D from the table titled "OfficeArtSpContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007F1B | 0010 | **D**: TextCFRun **- textCFRun** |  |
| 00007F1B | 0004 | unsigned integer **- count** | 0x00000007 |
| 00007F1F | 000C | TextCFException **- cf** |  |
| 00007F1F | 0004 | CFMasks **- masks** |  |
| 00007F1F | 1 bit | unsigned integer **- bold** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- italic** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- underline** | 0x1 |
| 00007F1F | 1 bit | unsigned integer **- unused1** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- shadow** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- fehint** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- unused2** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- kumi** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- unused3** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- emboss** | 0x0 |
| 00007F1F | 4 bits | unsigned integer **- fHasStyle** | 0x0 |
| 00007F1F | 2 bits | unsigned integer **- unused4** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- typeface** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- size** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- color** | 0x1 |
| 00007F1F | 1 bit | unsigned integer **- position** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- pp10ext** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- oldEATypeface** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- ansiTypeface** | 0x1 |
| 00007F1F | 1 bit | unsigned integer **- symbolTypeface** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- newEATypeface** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- csTypeface** | 0x0 |
| 00007F1F | 1 bit | unsigned integer **- pp11ext** | 0x0 |
| 00007F1F | 5 bits | unsigned integer **- reserved** | 0x00 |
| 00007F23 | 0002 | CFStyle **- fontStyle** |  |
| 00007F23 | 1 bit | unsigned integer **- bold** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- italic** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- underline** | 0x1 |
| 00007F23 | 1 bit | unsigned integer **- unused1** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- shadow** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- fehint** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- unused2** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- kumi** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- unused3** | 0x0 |
| 00007F23 | 1 bit | unsigned integer **- emboss** | 0x0 |
| 00007F23 | 4 bits | unsigned integer **- pp9rt** | 0x0 |
| 00007F23 | 2 bits | unsigned integer **- unused4** | 0x0 |
| 00007F25 | 0002 | unsigned integer **- ansiFontRef** | 0x0000 |
| 00007F27 | 0004 | ColorIndexStruct **- color** |  |

Figure 51: TextCFRun D child-record hierarchy

**count:** 0x00000007 specifies that these character-level properties apply to the next 7 characters, "circle" and the terminating ‘\n’. Note that the terminating ‘\n’ is not included in the preceding TextBytesAtom shown in the table titled "OfficeArtSpContainer child-record hierarchy" in this section.

**cf.masks.underline:** 0x0001 specifies that **cf.fontStyle** exists and that **cf.fontStyle.underline** is valid.

**cf.fontStyle:** Specifies character-level styling.

**cf.fontStyle.underline:** 0x0001 specifies that the text is underlined.

So far, the sum of the **count** field of the TextCFRun text structures is 22. Because the sum of the **count** field is the length of the text, this TextCFRun record is the final TextCFRun record.

### TextInteractiveInfo

This example shows how the hyperlink is specified for the yellow square on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 6 as shown in figure titled "Presentation slide 6" in section [3.1](#Section_510796aadbab4fcba535b08c754c1ca6).

The clickable text hyperlink is specified by an [MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb)record and a [MouseClickTextInteractiveInfoAtom](#Section_1efdc2bfa11d40928128147b3602be87)record following the [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) record, the characters of the text, and the formatting.

The child-record hierarchy of the **OfficeArtSpContainer** ([[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.14) record B from the table titled "DrawingContainer child-record hierarchy" in section [3.8.1](#Section_d959807b3d3041dda5c4c914f4f5098c) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007C30 | 0109 | OfficeArtSpContainer **- case of msofbtSpContainer** |  |
| 00007C30 | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007C38 | 0010 | OfficeArtFSP **- shapeProp** |  |
| 00007C48 | 0044 | OfficeArtFOPT **- shapePrimaryOptions** |  |
| 00007C8C | 000E | OfficeArtTertiaryFOPT **- shapeTertiaryOptions** |  |
| 00007C9A | 0010 | [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |  |
| 00007CAA | 008F | [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) **- clientTextbox** |  |
| 00007CAA | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00007CB2 | 000C | TextHeaderAtom **- case of RT\_TextHeaderAtom** |  |
| 00007CBE | 001D | [TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) **- case of RT\_TextBytesAtom** |  |
| 00007CBE | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |  |
| 00007CC6 | 0015 | array of bytes **- textBytes** | a \rhyperlinked\rsquare |
| 00007CDB | 002E | [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) **- case of RT\_StyleTextPropAtom** |  |
| 00007D09 | 0020 | **A**: MouseClickInteractiveInfoContainer **- mouseClickInteractiveInfoContainer** |  |
| 00007D29 | 0010 | **B**: MouseClickTextInteractiveInfoAtom **- mouseClickTextInteractiveInfoAtom** |  |

Figure 52: OfficeArtSpContainer child-record hierarchy

The child-record hierarchy of the MouseClickInteractiveInfoContainer record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007D09 | 0020 | MouseClickInteractiveInfoContainer **- mouseClickInteractiveInfoContainer** |  |
| 00007D09 | 0008 | RecordHeader **- rh** |  |
| 00007D09 | 4 bits | unsigned integer **- recVer** | 0xF |
| 00007D09 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007D0B | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0FF2 |
| 00007D0D | 0004 | unsigned integer **- recLen** | 0x00000018 |
| 00007D11 | 0018 | [InteractiveInfoAtom](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7) **- interactiveInfoAtom** |  |
| 00007D11 | 0008 | RecordHeader **- rh** |  |
| 00007D11 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007D11 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007D13 | 0002 | RecordType **- recType** | 0x0FF3 |
| 00007D15 | 0004 | unsigned integer **- recLen** | 0x00000010 |
| 00007D19 | 0004 | unsigned integer **- soundIdRef** | 0x00000000 |
| 00007D1D | 0004 | unsigned integer **- exHyperlinkIdRef** | 0x0000001C |
| 00007D21 | 0001 | [InteractiveInfoActionEnum](#Section_61cd7fe2e7d440929d4c3c5b720e8330) **- action** | 0x04 |
| 00007D22 | 0001 | [OLEVerbEnum](#Section_d3f3afeef16e41e7b03832a789f2e85b) **- oleVerb** | 0x00 |
| 00007D23 | 0001 | [InteractiveInfoJumpEnum](#Section_9466e4a7a80d42d4b6844f31463142b1) **- jump** | 0x00 |
| 00007D24 | 1 bit | bit **- fAnimated** | 0x0 |
| 00007D24 | 1 bit | bit **- fStopSound** | 0x0 |
| 00007D24 | 1 bit | bit **- fCustomShowReturn** | 0x0 |
| 00007D24 | 1 bit | bit **- fVisited** | 0x0 |
| 00007D24 | 4 bits | unsigned integer **- reserved** | 0x0 |
| 00007D25 | 0001 | [LinkToEnum](#Section_2f58ed281a7f43ceade7c2b04c74e522) **- hyperlinkType** | 0x08 |

Figure 53: MouseClickInteractiveInfoContainer child-record hierarchy

**interactiveInfoAtom.exHyperlinkIdRef:** 0x0000001C specifies the identifier of the hyperlink that is the target of this interactive portion of text.

The child-record hierarchy of the MouseClickTextInteractiveInfoAtomrecord B from the table titled "OfficeArtSpContainer child-record hierarchy" in this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007D29 | 0010 | MouseClickTextInteractiveInfoAtom **- mouseClickTextInteractiveInfoAtom** |  |
| 00007D29 | 0008 | RecordHeader **- rh** |  |
| 00007D29 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007D29 | 12 bits | unsigned integer **- recInstance** | 0x000 |
| 00007D2B | 0002 | RecordType **- recType** | 0x0FDF |
| 00007D2D | 0004 | unsigned integer **- recLen** | 0x00000008 |
| 00007D31 | 0008 | [TextRange](#Section_7bdc8284595a40c29a2f5245c1fda304) **- range** |  |
| 00007D31 | 0004 | signed integer **- begin** | 0x0000000F |
| 00007D35 | 0004 | signed integer **- end** | 0x00000015 |

Figure 54: MouseClickTextInteractiveInfoAtom child-record hierarchy

**range.begin:** 0x0000000F specifies the zero-based index of the first character, the 's', to which this hyperlink applies.

**range.end:** 0x00000015 specifies the zero-based index of the last character, the 'e', to which this hyperlink applies.

An [ExHyperlinkContainer](#Section_3145d686e4e34eb2849f03c4cf410d42) record exists for each hyperlink referenced in the document. The following ExHyperlinkContainer recordis the one referenced in the preceding sample of the yellow square.

The child-record hierarchy of the ExHyperlinkContainer record H from the table titled "ExObjListContainer child-record hierarchy" in section [3.8.4](#Section_ff524da91f4d4df591e87a734530ad11) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00005D95 | 005E | ExHyperlinkContainer **- case of RT\_ExternalHyperlink** |  |
| 00005D95 | 0008 | RecordHeader **- rh** |  |
| 00005D9D | 000C | [ExHyperlinkAtom](#Section_c760a33c472f449cb1db5dc5fe59ace1) **- exHyperlinkAtom** |  |
| 00005D9D | 0008 | RecordHeader **- rh** |  |
| 00005DA5 | 0004 | unsigned integer **- exHyperlinkId** | 0x0000001C |
| 00005DA9 | 0014 | [FriendlyNameAtom](#Section_e8e62224b3be43b9b97a658257d6af67) **- friendlyNameAtom** |  |
| 00005DA9 | 0008 | RecordHeader **- rh** |  |
| 00005DB1 | 000C | array of bytes **- friendlyName** | square |
| 00005DBD | 0036 | [TargetAtom](#Section_6a84616800154544a3c345f56e9577d8) **- targetAtom** |  |
| 00005DBD | 0008 | RecordHeader **- rh** |  |
| 00005DC5 | 002E | array of bytes **- target** | http://www.contoso.com/ |

Figure 55: ExHyperlinkContainer child-record hierarchy

The **exHyperlinkAtom.exHyperlinkId** field matches the **exHyperlinkIdRef** field of the InteractiveInfoAtomrecord shown in the table titled "MouseClickInteractiveInfoContainer child-record hierarchy" in this section.

**targetAtom:** Specifies the target of the hyperlink. In this case, it is the external Web site located at http://www.contoso.com/.

### Metacharacter

The following example shows how a footer metacharacter is specified on [**presentation slide**](#gt_18428521-9032-41a4-85c4-6fb65d882192) 6.

The following diagram shows the context of a footer placeholder on the [**main master slide**](#gt_d8127c39-79db-47fc-bd66-6870bd1cc35d).

The child-record hierarchy of the **MainMasterContainer** (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)) record B from the table titled "Top-level record sequence in the PowerPoint Document Stream from sample.ppt" in section [3.3](#Section_7bd57959d49c48a1940abde37ec93c6f) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00000CC5 | 09AC | MainMasterContainer **- case of RT\_MainMaster** |
| 00000CC5 | 0008 | [RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) **- rh** |
| 00000CCD | 0020 | [SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) **- slideAtom** |
| 00000CED | 0028 | [SchemeListElementColorSchemeAtom](#Section_cf7562a6f79f4705a2fb5f5d84bea12d) **- schemeListElementColorSchemeAtom** |
| 00000D15 | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000D3D | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000D65 | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000D8D | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000DB5 | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000DDD | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000E05 | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000E2D | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000E55 | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000E7D | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000EA5 | 0028 | SchemeListElementColorSchemeAtom **- schemeListElementColorSchemeAtom** |
| 00000ECD | 0046 | [TextMasterStyleAtom](#Section_5febad270c484f98b655562b986f5874) **- textMasterStyleAtom** |
| 00000F13 | 0084 | TextMasterStyleAtom **- textMasterStyleAtom** |
| 00000F97 | 0076 | TextMasterStyleAtom **- textMasterStyleAtom** |
| 0000100D | 005A | TextMasterStyleAtom **- textMasterStyleAtom** |
| 00001067 | 0014 | TextMasterStyleAtom **- textMasterStyleAtom** |
| 0000107B | 0046 | TextMasterStyleAtom **- textMasterStyleAtom** |
| 000010C1 | 0046 | TextMasterStyleAtom **- textMasterStyleAtom** |
| 00001107 | 04DE | [DrawingContainer](#Section_0595b49fda964402b3531f766e9d548f) **- drawing** |
| 00001107 | 0008 | RecordHeader **- rh** |
| 0000110F | 04D6 | OfficeArtDgContainer **- OfficeArtDg** |
| 0000110F | 0008 | OfficeArtRecordHeader **- rh** |
| 00001117 | 0010 | OfficeArtFDG **- drawingData** |
| 00001127 | 046E | **A**: OfficeArtSpgrContainer **- groupShape** |
| 00001595 | 0050 | OfficeArtSpContainer **- shape** |
| 000015E5 | 0028 | [SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) **- slideSchemeColorSchemeAtom** |
| 0000160D | 0040 | [SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) **- slideProgTagsContainer** |
| 0000164D | 0024 | [TemplateNameAtom](#Section_cebe780b49ee491b81a10f90d3872e03) **- templateNameAtom** |

Figure 56: MainMasterContainer child-record hierarchy

The child-record hierarchy of the **OfficeArtSpgrContainer** record A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00001127 | 046E | OfficeArtSpgrContainer **- groupShape** |
| 00001127 | 0008 | OfficeArtRecordHeader **- rh** |
| 0000112F | 0030 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 0000115F | 00DA | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00001239 | 011E | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00001357 | 00BE | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00001415 | 00C0 | OfficeArtSpContainer **- case of msofbtSpContainer** |
| 00001415 | 0008 | OfficeArtRecordHeader **- rh** |
| 0000141D | 0010 | OfficeArtFSP **- shapeProp** |
| 0000142D | 0038 | OfficeArtFOPT **- shapePrimaryOptions** |
| 00001465 | 0010 | [OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) **- clientAnchor** |
| 00001475 | 0018 | [OfficeArtClientData](#Section_ac3b454db5ea4da8a57c32fc08ed332a) **- clientData** |
| 0000148D | 0048 | **A**: [OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) **- clientTextbox** |
| 000014D5 | 00C0 | OfficeArtSpContainer **- case of msofbtSpContainer** |

Figure 57: OfficeArtSpgrContainer child-record hierarchy

The child-record hierarchy of the OfficeArtClientTextboxrecord A from the previous table is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 0000148D | 0048 | OfficeArtClientTextbox **- clientTextbox** |  |
| 0000148D | 0008 | OfficeArtRecordHeader **- rh** |  |
| 00001495 | 000C | [TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) **- case of RT\_TextHeaderAtom** |  |
| 00001495 | 0008 | RecordHeader **- rh** |  |
| 0000149D | 0004 | [TextTypeEnum](#Section_50118cd348c243299a406a0281e960b6) **- textType** | 0x00000004 |
| 000014A1 | 000A | [TextCharsAtom](#Section_a3c5c8d5e5304167a2427743bc99aeac) **- case of RT\_TextCharsAtom** |  |
| 000014A1 | 0008 | RecordHeader **- rh** |  |
| 000014A9 | 0002 | array of bytes **- textChars** | \* |
| 000014AB | 001E | [StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) **- case of RT\_StyleTextPropAtom** |  |
| 000014AB | 0008 | RecordHeader **- rh** |  |
| 000014B3 | 000C | [TextPFRun](#Section_4e95a4f9a9af42b5b81af8f991cb1418) **- textPFRun** |  |
| 000014BF | 000A | [TextCFRun](#Section_426f313aa4f34ffba0419a74ccf23f17) **- textCFRun** |  |
| 000014BF | 0004 | unsigned integer **- count** | 0x00000002 |
| 000014C3 | 0006 | [TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) **- cf** |  |
| 000014C9 | 000C | [FooterMCAtom](#Section_5a2fa1e2bc5f450b89d0b372a811313a) **- case of RT\_FooterMetaCharAtom** |  |
| 000014C9 | 0008 | RecordHeader **- rh** |  |
| 000014D1 | 0004 | signed integer **- position** | 0x00000000 |

Figure 58: OfficeArtClientTextbox record A child-record hierarchy

**case of RT\_TextHeaderAtom.textType:** 0x00000004 specifies that this text is of type Tx\_TYPE\_OTHER.

**case of RT\_TextCharsAtom.textChars:** "\*" is only used as a placeholder in this context.

**case of RT\_FooterMetaCharAtom.position:** 0x00000000 specifies that a footer metacharacter exists as the first character in the placeholder.

The main master slide specified by the **MainMasterContainer** record is the main master slide for presentation slide 6. When presentation slide 6 contains a [FooterAtom](#Section_be36887533e9490db832954eb800a240) record, the text specified by the FooterAtom is placed into the shape specified by the OfficeArtClientTextBox on the main master slide.

Slide-level footer information is contained in the [PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) record contained in the **SlideContainer** (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)) for presentation slide 6.

The child-record hierarchy of the PerSlideHeadersFootersContainer record B from the table titled "SlideContainer record U child-record hierarchy" in section [3.5.2](#Section_cb3376a86bd64c62b579081eef2195b5) is shown expanded in the following table.

| **Offset** | **Size** | **Structure** |
| --- | --- | --- |
| 00007B1E | 003A | PerSlideHeadersFootersContainer **- perSlideHeadersFootersContainer** |
| 00007B1E | 0008 | RecordHeader **- rh** |
| 00007B26 | 000C | **A**: [HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082) **- hfAtom** |
| 00007B32 | 0026 | **B**: FooterAtom **- footerAtom** |

Figure 59: PerSlideHeadersFooterContainer child-record hierarchy

The child-record hierarchy of the HeadersFootersAtom record A from this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007B26 | 000C | **A**: HeadersFootersAtom **- hfAtom** |  |
| 00007B26 | 0008 | RecordHeader **- rh** |  |
| 00007B2E | 0002 | signed integer **- formatId** | 0x000D |
| 00007B30 | 1 bit | unsigned integer **- fHasDate** | 0x0 |
| 00007B30 | 1 bit | unsigned integer **- fHasTodayDate** | 0x0 |
| 00007B30 | 1 bit | unsigned integer **- fHasUserDate** | 0x1 |
| 00007B30 | 1 bit | unsigned integer **- fHasSlideNumber** | 0x0 |
| 00007B30 | 1 bit | unsigned integer **- fHasHeader** | 0x0 |
| 00007B30 | 1 bit | unsigned integer **- fHasFooter** | 0x1 |
| 00007B30 | 10 bits | unsigned integer **- reserved** | 0x000 |

Figure 60: HeaderFootersAtom record A child-record hierarchy

**fHasFooter:** 0x0001 specifies that this slide will show the footer.

The child-record hierarchy of the FooterAtom record B from this section is shown expanded in the following table.

| **Offset** | **Size** | **Structure** | **Value** |
| --- | --- | --- | --- |
| 00007B32 | 0026 | **B**: FooterAtom **- footerAtom** |  |
| 00007B32 | 0008 | RecordHeader **- rh** |  |
| 00007B32 | 4 bits | unsigned integer **- recVer** | 0x0 |
| 00007B32 | 12 bits | unsigned integer **- recInstance** | 0x002 |
| 00007B34 | 0002 | [RecordType](#Section_38fb1fa50a62477a8b14178df22de812) **- recType** | 0x0FBA |
| 00007B36 | 0004 | unsigned integer **- recLen** | 0x0000001E |
| 00007B3A | 001E | array of bytes **- footer** | text formatting |

Figure 61: FooterAtom record B child-record hierarchy

**footer:** "text formatting" specifies the characters to display for the footer metacharacter when it appears on this slide.

# Security Considerations

For [**encrypted documents**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220), the block number 0 is reused for every field of an **OfficeArtBStoreContainerFileBlock** record (described in [[MS-ODRAW]](%5bMS-ODRAW%5d.pdf#Section_8560795e77594745838ff7f2ef2f1872) section 2.2.22) within the **Pictures Stream**.

Additional security considerations for encrypted documents are described in [[MS-OFFCRYPTO]](%5bMS-OFFCRYPTO%5d.pdf#Section_3c34d72a1a614b52a893196f9157f083) section 4.1.3.2.

See the **CryptSession10Container** record (section [2.3.7](#Section_b096333444084621879aef9c54551fd8)) for more information about how to encrypt and decrypt encrypted documents.

# Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

* Microsoft PowerPoint 97
* Microsoft PowerPoint 2000
* Microsoft PowerPoint 2002
* Microsoft Office PowerPoint 2003
* Microsoft Office PowerPoint 2007
* Microsoft PowerPoint 2010
* Microsoft PowerPoint 2013
* Microsoft PowerPoint 2016
* Microsoft PowerPoint 2019
* Microsoft PowerPoint 2021

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms "SHOULD" or "SHOULD NOT" implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term "MAY" implies that the product does not follow the prescription.

[<1> Section 2.1.2](#Appendix_A_Target_1): PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 preserve unknown records found in the following records: **DocumentContainer** (section [2.4.1](#Section_6254c4d152174e16b20dc04ddcce31c9)), **DrawingContainer** (section [2.5.13](#Section_0595b49fda964402b3531f766e9d548f)), **DrawingGroupContainer** (section [2.4.3](#Section_1daf91b135314e55ba6a2e271de975c0)), **OfficeArtClientData** (section [2.7.3](#Section_ac3b454db5ea4da8a57c32fc08ed332a)), **ExControlContainer** (section [2.10.10](#Section_4a873d5bdd274b29bdaa705bb2ef3d92)), **ExOleEmbedContainer** (section [2.10.27](#Section_c687090ca3594ffc918e415117e10229) ), **ExOleLinkContainer** (section [2.10.29](#Section_5311e92722f04e559f439142998efbd1)), **HandoutContainer** (section [2.5.8](#Section_bf6d1f839023412089c3fb69e49d0212)), **Kinsoku9Container** (section [2.9.6](#Section_78abb8b8747b428ebfbac8f8ca6c6b38)), **KinsokuContainer** (section [2.9.2](#Section_d22fdfcfb0334a9ab4beabc379ad0039)), **MainMasterContainer** (section [2.5.3](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8)), **MasterListWithTextContainer** (section [2.4.14.1](#Section_18a9bc043307440ebbc2efcb75ee923d)), **NamedShowsContainer** (section [2.6.2](#Section_a3d04187565b423f90c637d219781b0c)), **NormalViewSetInfoContainer** (section [2.4.21.2](#Section_5b7a13338de24c50a83838c389db3147)), **NotesContainer** (section [2.5.6](#Section_50bfc0f7c1014c3287546ca59772b785)), **NotesListWithTextContainer** (section [2.4.14.6](#Section_55453e3706744703bd8dfcaba335f840)), **NotesViewInfoContainer** (section [2.4.21.12](#Section_96636c7591464d128099f0f50e382b71)), **SubEffectContainer** (section [2.8.16](#Section_8f1586ac86864bda9ba58cc43ba91642)), **SlideContainer** (section [2.5.1](#Section_4cac097673d04ab3a70be98b3cf1c312)), **SlideListWithTextContainer** (section [2.4.14.3](#Section_307e6d12730447a8acbd3e7b8041ad3c)), and **SlideViewInfoContainer** (section [2.4.21.9](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3)).

PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 additionally preserve unknown records found in the following records: **ClientVisualElementContainer** (section [2.8.44](#Section_80b3266a1fe64140acef0483ac355c89)), **ExtTimeNodeContainer** (section [2.8.15](#Section_83d39c580d3046a4bffb188d792cb5a7)), **TimeAnimateBehaviorContainer** (section [2.8.29](#Section_bc65cd1c14a74c0dbc2d192bab64a713)), **TimeAnimationValueListContainer** (section [2.8.31](#Section_9177feba1a8140b8950dd1de63ae8ee7)), **TimeBehaviorContainer** (section [2.8.34](#Section_8d75cc5b6f804b2e980ba521e2691e54)), **TimeColorBehaviorContainer** (section [2.8.52](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1)), **TimeCommandBehaviorContainer** (section [2.8.71](#Section_d188069b704c4f9d838898a7eb357f0f)), **TimeConditionContainer** (section [2.8.75](#Section_3b2ae2ff52fc405b8c3afd0702f490d3)), **TimeEffectBehaviorContainer** (section [2.8.61](#Section_498a5d0f07254a06a7de7c67394e9146)), **TimeMotionBehaviorContainer** (section [2.8.63](#Section_40b9860a04a54946ae4b51fdd1176cec)), **TimePropertyList4TimeNodeContainer** (section [2.8.18](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2)), **TimeRotationBehaviorContainer** (section [2.8.65](#Section_2ef1f0c624534be7875ea1a7d7201580)), **TimeScaleBehaviorContainer** (section [2.8.67](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a)), **TimeSetBehaviorContainer** (section [2.8.69](#Section_5428095fe4c443d0ad36b8b240e1338b)), and **TimeStringListContainer** (section [2.8.36](#Section_99109d34b306454e8e19da1f090cedd9)).

[<2> Section 2.1.5](#Appendix_A_Target_2): PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 create this stream for encrypted documents, but the contents of the stream will be empty.

[<3> Section 2.1.7](#Appendix_A_Target_3): PowerPoint 97 and PowerPoint 2000 omit and ignore this storage, because these versions do not support signatures. PowerPoint 2002 and Office PowerPoint 2003 also omit and ignore this storage and instead use the "\_signatures" stream.

[<4> Section 2.1.9](#Appendix_A_Target_4): PowerPoint 97 and PowerPoint 2000 omit and ignore this stream, because these versions do not support signatures. PowerPoint 2002 and Office PowerPoint 2003 do not omit this stream.

[<5> Section 2.2.3](#Appendix_A_Target_5): The object models in PowerPoint 97, PowerPoint 2000, PowerPoint 2002, and Office PowerPoint 2003 allow bullet sizes to be specified as percentages outside the range of 25 to 400, inclusive.

[<6> Section 2.3.2](#Appendix_A_Target_6): PowerPoint 2002 uses the **headerToken** 0xE391C05F for [**encrypted documents**](#gt_3bcdc50b-9595-415a-ab9f-dd569ad92220).

[<7> Section 2.3.2](#Appendix_A_Target_7): PowerPoint 2000 initially used the value 0x00000009 to indicate to PowerPoint 97 that a file contained multiple main master slides and therefore could not be opened by PowerPoint 97. PowerPoint 97 was subsequently updated to add support for reading files with multiple main master slides, and PowerPoint 2000 was later updated to stop writing 0x00000009 to indicate the presence of multiple master slides.

[<8> Section 2.3.2](#Appendix_A_Target_8): PowerPoint 97 omits this field.

[<9> Section 2.3.3](#Appendix_A_Target_9): PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 write the minor build version of powerpnt.exe to this field.

[<10> Section 2.3.3](#Appendix_A_Target_10): PowerPoint 97 and PowerPoint 2000 will omit this field because they do not support opening or creating encrypted documents.

[<11> Section 2.3.7](#Appendix_A_Target_11): PowerPoint 2002 writes 0xE391C05F to the **headerToken** field for an encrypted document.

[<12> Section 2.4.15.2](#Appendix_A_Target_12): PowerPoint 97 behaves unpredictably if **formatId** is 0x000D; PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 interpret it as 0x0000 instead.

[<13> Section 2.4.16.5](#Appendix_A_Target_13): PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 store the file extension of the source sound file initially embedded. Regardless of the file extension, only [**WAV**](#gt_ad6b8043-7f72-46cf-b4c5-42cc2e157bb5) and [**AIFF**](#gt_bca83483-d1d0-4227-a1c3-e6e63d26257b) audio files are supported by these versions for playback.

[<14> Section 2.4.17.1](#Appendix_A_Target_14): Only PowerPoint 2000 fully supports the **BroadcastDocInfo9Container** record. PowerPoint 2002 supports a subset of this record necessary for archiving a presentation broadcast.

[<15> Section 2.4.23.1](#Appendix_A_Target_15): PowerPoint 97 sets this field to 0x001.

[<16> Section 2.4.23.4](#Appendix_A_Target_16): PowerPoint 97 ignores this record.

[<17> Section 2.4.23.4](#Appendix_A_Target_17): PowerPoint 97 and PowerPoint 2000 ignore this record.

[<18> Section 2.4.23.4](#Appendix_A_Target_18): PowerPoint 97, PowerPoint 2000 and PowerPoint 2002 ignore this record.

[<19> Section 2.4.23.4](#Appendix_A_Target_19): PowerPoint 97, PowerPoint 2000, PowerPoint 2002, and Office PowerPoint 2003 ignore this record.

[<20> Section 2.4.23.5](#Appendix_A_Target_20): PowerPoint 2000 and PowerPoint 2002 do not ignore this field.

[<21> Section 2.4.23.5](#Appendix_A_Target_21): PowerPoint 2000 does not ignore this field.

[<22> Section 2.4.23.5](#Appendix_A_Target_22): PowerPoint 2000 does not ignore this field.

[<23> Section 2.4.23.5](#Appendix_A_Target_23): PowerPoint 2000 and PowerPoint 2002 do not ignore this field.

[<24> Section 2.4.23.6](#Appendix_A_Target_24): PowerPoint 2002 and Office PowerPoint 2003 do not ignore this field.

[<25> Section 2.4.23.6](#Appendix_A_Target_25): PowerPoint 2002 and Office PowerPoint 2003 do not omit this field when the document contains embedded reviewer documents.

[<26> Section 2.4.23.6](#Appendix_A_Target_26): PowerPoint 2002 and Office PowerPoint 2003 do not ignore this field.

[<27> Section 2.4.23.6](#Appendix_A_Target_27): PowerPoint 2002 and Office PowerPoint 2003 do not omit this field when the document contains embedded reviewer documents.

[<28> Section 2.4.23.6](#Appendix_A_Target_28): PowerPoint 2002 and Office PowerPoint 2003 do not ignore this field.

[<29> Section 2.4.23.6](#Appendix_A_Target_29): PowerPoint 2002 and Office PowerPoint 2003 do not omit this field when the document contains embedded reviewer documents.

[<30> Section 2.4.23.8](#Appendix_A_Target_30): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not omit this field.

[<31> Section 2.5.1](#Appendix_A_Target_31): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not preserve this field.

[<32> Section 2.5.1](#Appendix_A_Target_32): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this field.

[<33> Section 2.5.1](#Appendix_A_Target_33): PowerPoint 97 does not preserve this field.

[<34> Section 2.5.1](#Appendix_A_Target_34): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not preserve this record.

[<35> Section 2.5.2](#Appendix_A_Target_35): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<36> Section 2.5.2](#Appendix_A_Target_36): PowerPoint 97 does not preserve this record.

[<37> Section 2.5.2](#Appendix_A_Target_37): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<38> Section 2.5.2](#Appendix_A_Target_38): PowerPoint 97 does not preserve this record.

[<39> Section 2.5.2](#Appendix_A_Target_39): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<40> Section 2.5.2](#Appendix_A_Target_40): PowerPoint 97 does not preserve this record.

[<41> Section 2.5.2](#Appendix_A_Target_41): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<42> Section 2.5.2](#Appendix_A_Target_42): PowerPoint 97 does not preserve this record.

[<43> Section 2.5.2](#Appendix_A_Target_43): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<44> Section 2.5.2](#Appendix_A_Target_44): PowerPoint 97 does not preserve this record.

[<45> Section 2.5.2](#Appendix_A_Target_45): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<46> Section 2.5.2](#Appendix_A_Target_46): PowerPoint 97 does not preserve this record.

[<47> Section 2.5.2](#Appendix_A_Target_47): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<48> Section 2.5.2](#Appendix_A_Target_48): PowerPoint 97 does not preserve this record.

[<49> Section 2.5.3](#Appendix_A_Target_49): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this field.

[<50> Section 2.5.3](#Appendix_A_Target_50): PowerPoint 97 does not preserve this field.

[<51> Section 2.5.3](#Appendix_A_Target_51): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not preserve this field.

[<52> Section 2.5.3](#Appendix_A_Target_52): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not preserve this field.

[<53> Section 2.5.4](#Appendix_A_Target_53): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<54> Section 2.5.4](#Appendix_A_Target_54): PowerPoint 97 does not preserve this record.

[<55> Section 2.5.4](#Appendix_A_Target_55): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<56> Section 2.5.4](#Appendix_A_Target_56): PowerPoint 97 does not preserve this record.

[<57> Section 2.5.4](#Appendix_A_Target_57): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<58> Section 2.5.4](#Appendix_A_Target_58): PowerPoint 97 does not preserve this record.

[<59> Section 2.5.4](#Appendix_A_Target_59): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<60> Section 2.5.4](#Appendix_A_Target_60): PowerPoint 97 does not preserve this record.

[<61> Section 2.5.4](#Appendix_A_Target_61): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<62> Section 2.5.4](#Appendix_A_Target_62): PowerPoint 97 does not preserve this record.

[<63> Section 2.5.4](#Appendix_A_Target_63): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<64> Section 2.5.4](#Appendix_A_Target_64): PowerPoint 97 does not preserve this record.

[<65> Section 2.5.4](#Appendix_A_Target_65): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<66> Section 2.5.4](#Appendix_A_Target_66): PowerPoint 97 does not preserve this record.

[<67> Section 2.5.4](#Appendix_A_Target_67): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<68> Section 2.5.4](#Appendix_A_Target_68): PowerPoint 97 does not preserve this record.

[<69> Section 2.5.6](#Appendix_A_Target_69): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not preserve this record.

[<70> Section 2.5.7](#Appendix_A_Target_70): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<71> Section 2.5.7](#Appendix_A_Target_71): PowerPoint 97 does not preserve this record.

[<72> Section 2.5.7](#Appendix_A_Target_72): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<73> Section 2.5.7](#Appendix_A_Target_73): PowerPoint 97 does not preserve this record.

[<74> Section 2.5.7](#Appendix_A_Target_74): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<75> Section 2.5.7](#Appendix_A_Target_75): PowerPoint 97 does not preserve this record.

[<76> Section 2.5.8](#Appendix_A_Target_76): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not preserve this record.

[<77> Section 2.5.9](#Appendix_A_Target_77): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<78> Section 2.5.9](#Appendix_A_Target_78): PowerPoint 97 does not preserve this record.

[<79> Section 2.5.9](#Appendix_A_Target_79): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<80> Section 2.5.9](#Appendix_A_Target_80): PowerPoint 97 does not preserve this record.

[<81> Section 2.5.22](#Appendix_A_Target_81): PowerPoint 97 ignores this record.

[<82> Section 2.5.22](#Appendix_A_Target_82): PowerPoint 97 and PowerPoint 2000 ignore this record.

[<83> Section 2.5.22](#Appendix_A_Target_83): PowerPoint 97, PowerPoint 2000, PowerPoint 2002, and Office PowerPoint 2003 ignore this record.

[<84> Section 2.5.24](#Appendix_A_Target_84): PowerPoint 2002 and Office PowerPoint 2003 do not ignore this field.

[<85> Section 2.5.24](#Appendix_A_Target_85): PowerPoint 2002 and Office PowerPoint 2003 do not omit this field when the document contains embedded reviewer documents.

[<86> Section 2.5.24](#Appendix_A_Target_86): PowerPoint 2002 and Office PowerPoint 2003 do not ignore this field.

[<87> Section 2.5.24](#Appendix_A_Target_87): PowerPoint 2002 and Office PowerPoint 2003 do not omit this field when the document contains embedded reviewer documents.

[<88> Section 2.7.4](#Appendix_A_Target_88): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<89> Section 2.7.4](#Appendix_A_Target_89): PowerPoint 97 does not preserve this record.

[<90> Section 2.7.4](#Appendix_A_Target_90): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<91> Section 2.7.4](#Appendix_A_Target_91): PowerPoint 97 does not preserve this record.

[<92> Section 2.7.4](#Appendix_A_Target_92): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<93> Section 2.7.4](#Appendix_A_Target_93): PowerPoint 97 does not preserve this record.

[<94> Section 2.7.4](#Appendix_A_Target_94): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this record.

[<95> Section 2.7.4](#Appendix_A_Target_95): PowerPoint 97 does not preserve this record.

[<96> Section 2.7.6](#Appendix_A_Target_96): PowerPoint 97 and PowerPoint 2000 ignore this field.

[<97> Section 2.7.9](#Appendix_A_Target_97): PowerPoint 97, PowerPoint 2000, PowerPoint 2002 and Office PowerPoint 2003 do not ignore this flag.

[<98> Section 2.7.9](#Appendix_A_Target_98): PowerPoint 97, PowerPoint 2000, PowerPoint 2002 and Office PowerPoint 2003 do not ignore this flag.

[<99> Section 2.7.14](#Appendix_A_Target_99): PowerPoint 97 sets this field to 0x001 or 0x002.

[<100> Section 2.7.17](#Appendix_A_Target_100): PowerPoint 97 ignores this record.

[<101> Section 2.7.17](#Appendix_A_Target_101): PowerPoint 97 and PowerPoint 2000 ignore this record.

[<102> Section 2.7.17](#Appendix_A_Target_102): PowerPoint 97, PowerPoint 2000 and PowerPoint 2002 ignore this record.

[<103> Section 2.8.1](#Appendix_A_Target_103): PowerPoint 97 and PowerPoint 2000 do not ignore this field. PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not ignore this field if an animation hash computed as specified in the [HashCode10Atom](#Section_bd2afac84f484071ba1a346546e1bee7) record does not match the value stored in the HashCode10Atom record itself. If the two hashes do match, the contents of this field are ignored in favor of the contents of the **ExtTimeNodeContainer** record contained by the **SlideContainer** (section 2.5.1) or **MainMasterContainer** (section 2.5.3) record that contains this **AnimationInfoContainer** record. If the two hashes do not match, the contents of the **ExtTimeNodeContainer** record are instead ignored in favor of the contents of the **AnimationInfoAtom** records.

[<104> Section 2.8.2](#Appendix_A_Target_104): If this field is -1, PowerPoint 97 and PowerPoint 2000 play the animation for this shape before all other shapes; PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 ignore the animation for the shape.

[<105> Section 2.8.2](#Appendix_A_Target_105): PowerPoint 2002 and Office PowerPoint 2003 write out 0x00.

[<106> Section 2.8.10](#Appendix_A_Target_106): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 set this value as less than or equal to 0x00000009.

[<107> Section 2.9.53](#Appendix_A_Target_107): PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003, Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 ignore this record when **end** – **begin** is greater than or equal to 256.

[<108> Section 2.10.28](#Appendix_A_Target_108): PowerPoint 2000 writes other positive values besides 0x01. All values not equal to 0x00 are interpreted as 0x01.

[<109> Section 2.10.28](#Appendix_A_Target_109): PowerPoint 97 does not ignore this field.

[<110> Section 2.11.13](#Appendix_A_Target_110): Office PowerPoint 2007 set this field to 0xF. Microsoft Office PowerPoint 2007 Service Pack 1 and Microsoft Office PowerPoint 2007 Service Pack 2 set this field to 0x0.

[<111> Section 2.11.21](#Appendix_A_Target_111): PowerPoint 97 does not preserve this record.

[<112> Section 2.11.21](#Appendix_A_Target_112): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 do not omit this record.

[<113> Section 2.13.11](#Appendix_A_Target_113): Office PowerPoint 2007, PowerPoint 2010, and PowerPoint 2013 use ExOleSub\_Visio; PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003 use **ExOleSub\_Default** for **ProgID Visio.Drawing**.

[<114> Section 2.13.11](#Appendix_A_Target_114): Office PowerPoint 2007 starting with SP2, PowerPoint 2010, and PowerPoint 2013 use **ExOleSub\_WordODF**. PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003 use **ExOleSub\_Default** for **ProgID Word.OpenDocumentText**.

[<115> Section 2.13.11](#Appendix_A_Target_115): Office PowerPoint 2007 starting with SP2, PowerPoint 2010, and PowerPoint 2013 use **ExOleSub\_ExcelODF**. PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003 use **ExOleSub\_Default** for **ProgID** **Excel.OpenDocumentSpreadsheet**.

[<116> Section 2.13.11](#Appendix_A_Target_116): Office PowerPoint 2007 starting with SP2, PowerPoint 2010, and PowerPoint 2013 use **ExOleSub\_PPTODF**. PowerPoint 97, PowerPoint 2000, PowerPoint 2002, Office PowerPoint 2003 use **ExOleSub\_Default** for **ProgID** **PowerPoint.OpenDocumentPresentation**.

# Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

* A document revision that incorporates changes to interoperability requirements.
* A document revision that captures changes to protocol functionality.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

| Section | Description | Revision class |
| --- | --- | --- |
| [2.4.20.20](#Section_f3301c55be65413c824042f97e72ae65) RecolorInfoDiffContainer | Changed RecolorDiffContainer to RecolorInfoDiffContainer. | Minor |
| [2.5.33](#Section_4ad01f52581d4163b6cebd48fdeba54f) LinkedShape10Atom | Changed LinedShape10Atom to LinkedShape10Atom. | Minor |
| [2.6.6](#Section_10dc4455c5d8472086468cde8644a040) SlideShowSlideInfoAtom | Changed soundIfRef to soundIdRef. | Minor |
| [2.7.9](#Section_01ac11fb62734b36932d39b861eb144c) RecolorInfoAtom | Changed cColor to cColors. | Minor |
| [2.8.64](#Section_0c7cb657218342c8ae2e887766db0815) TimeMotionBehaviorAtom | Changed timeContainer to timeBehaviorContainer. | Minor |
| [2.13.24](#Section_38fb1fa50a62477a8b14178df22de812) RecordType | ChangedRoundTripShapeCheckSumForCustomLayouts12AtomAtom to RoundTripShapeCheckSumForCustomLayouts12Atom. | Minor |
| [5](#Section_de2e8a1c53a64aaf983d2f5c6a531b4f) Appendix A: Product Behavior | Updated list of supported products. | major |

# Index

A

[AnimAfterEffectEnum enumeration](#Section_4d043d499e804992884f02375f6bdcd3) 461

Animation

[behavior types](#section_a7f2e25fe1f14d16b54e32e10413bc04) 24

[builds](#section_585383b874df4c03adc41f6ce4809fa1) 25

[conditional properties](#section_5fc44075e8f34104b58189f1056e5580) 24

[examples](#section_9aadd4e5a29b4d17934ea8eb42d5512d) 542

[timeline](#section_78efd251ec204bbdaee07c0bfce12c31) 24

[Animation example](#section_9aadd4e5a29b4d17934ea8eb42d5512d) 542

[Animation examples](#section_9aadd4e5a29b4d17934ea8eb42d5512d) 542

[Animation overview](#section_2d005a8fb95e44f4835a13b944c54dc2) 24

Animation type

[AnimationInfoAtom](#Section_4361cc1fcd514e61a451d252bf8e1069) 215

[AnimationInfoContainer](#Section_a35de8fea76b43fc8e53ebcff8843705) 214

[BuildAtom](#Section_baa3c302b96c4f0b851708c50c38952b) 228

[BuildListContainer](#Section_48ffef8e5b8d4711a598cfa1f9fcb252) 226

[BuildListSubContainer](#Section_23d80d2c186d4f918ef0ccf083ddb94f) 226

[ChartBuildAtom](#Section_f3f0965c0aaf43099601fc33308ff0aa) 232

[ChartBuildContainer](#Section_241274967eae4564825b186f6360ffcc) 231

[ClientVisualElementContainer](#Section_80b3266a1fe64140acef0483ac355c89) 280

[DiagramBuildAtom](#Section_f23973b309df492e99149cd331f8a5bc) 233

[DiagramBuildContainer](#Section_fb5d0358ee2644e8bf0e04d035401fd2) 233

[ExtTimeNodeContainer](#Section_83d39c580d3046a4bffb188d792cb5a7) 234

[HashCode10Atom](#Section_bd2afac84f484071ba1a346546e1bee7) 224

[HSLColorBy](#Section_30ad7500612f41628e7e55d0e38e43aa) 288

[IndexSchemeColor](#Section_62ae89441ac84b6aaa5e0b1ea5583ace) 290

[LevelInfoAtom](#Section_ada7819fc1d54331b64caba3db29ce4d) 230

[ParaBuildAtom](#Section_8eeb2908927340e8bb4330d07220ba58) 228

[ParaBuildContainer](#Section_4bd5c65e913445eead0d18b57d147c7e) 227

[ParaBuildLevel](#Section_18419a57831c4c22b620b2540292df6c) 230

[RGBColor](#Section_92e06186219841e59d3db426ad1adf4b) 289

[RGBColorBy](#Section_34933da86c6e4a90bc499585875457a5) 288

[SubEffectContainer](#Section_8f1586ac86864bda9ba58cc43ba91642) 238

[TimeAnimateBehaviorAtom](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe) 265

[TimeAnimateBehaviorContainer](#Section_bc65cd1c14a74c0dbc2d192bab64a713) 263

[TimeAnimateColor](#Section_543d75a1d95d45aa8736547b8b0c7e62) 289

[TimeAnimateColorBy](#Section_e55e201bb36b47a89b054903cfcf2941) 287

[TimeAnimationValueAtom](#Section_65496e4f4e9743beb68e4f1355f41aa3) 270

[TimeAnimationValueListContainer](#Section_9177feba1a8140b8950dd1de63ae8ee7) 267

[TimeAnimationValueListEntry](#Section_be583d6811d743c2a3008ef2ffac7841) 267

[TimeBehaviorAtom](#Section_9f996c4a3780415c9a6771d323788f95) 272

[TimeBehaviorContainer](#Section_8d75cc5b6f804b2e980ba521e2691e54) 271

[TimeColorBehaviorAtom](#Section_82b99b3c9e2e43778bf326b0e69537a5) 286

[TimeColorBehaviorContainer](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1) 285

[TimeColorBehaviorPropertyUsedFlag](#Section_1949c9462a334a0b8f42d700a5ab7735) 287

[TimeColorDirection](#Section_0299e331262745c59fe0541de33dcaa8) 277

[TimeColorModel](#Section_3c4894dddd604fde8e92a0d9bcd730ff) 276

[TimeCommandBehaviorAtom](#Section_19b49fc55a7f4022ba930df4d5269bb3) 330

[TimeCommandBehaviorContainer](#Section_d188069b704c4f9d838898a7eb357f0f) 328

[TimeConditionAtom](#Section_6d79388473f24b87b8b1a1b0e6310ad6) 335

[TimeConditionContainer](#Section_3b2ae2ff52fc405b8c3afd0702f490d3) 334

[TimeDisplayType](#Section_4ce3979934b1456a9a21dc5dda7c0d21) 243

[TimeEffectBehaviorAtom](#Section_bf8ed545f2f548528ffb7b69c6ddc128) 295

[TimeEffectBehaviorContainer](#Section_498a5d0f07254a06a7de7c67394e9146) 290

[TimeEffectID](#Section_35c58b5655324d778c3353a82efb5a89) 246

[TimeEffectNodeType](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) 262

[TimeEffectType](#Section_989fce31f9b845a8a358361ca53d7a3d) 259

[TimeEventFilter](#Section_a4433ce8d99e43a6999c1387161c610d) 261

[TimeGroupID](#Section_da6bcd4790ea44a692a0aeca9c2864e4) 261

[TimeIterateDataAtom](#Section_96e2df55a3be4175a8307dc3c3ae46ca) 330

[TimeMasterRelType](#Section_a55a946ac8df4659a2934fe3370e4706) 244

[TimeModifierAtom](#Section_bbfa8706196c4508934c8007a84773ea) 336

[TimeMotionBehaviorAtom](#Section_0c7cb657218342c8ae2e887766db0815) 298

[TimeMotionBehaviorContainer](#Section_40b9860a04a54946ae4b51fdd1176cec) 296

[TimeNodeAtom](#Section_a6b40fd7decd4d6e991a10394458c6a8) 240

[TimeNodeTimeFilter](#Section_41a5d8b9c0014fecaf559903e8a7a482) 260

[TimeOverride](#Section_20ce9a318eaa4a42b957b9111be76b2c) 277

[TimePointsTypes](#Section_1656e976a2c14a19a9e9dccd516f24af) 279

[TimePropertyList4TimeBehavior](#Section_51c4cc592d584ac98b254abc1040780d) 274

[TimePropertyList4TimeNodeContainer](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2) 241

[TimeRotationBehaviorAtom](#Section_0fc7d6f315a0464b958c6bfdbf874050) 300

[TimeRotationBehaviorContainer](#Section_2ef1f0c624534be7875ea1a7d7201580) 300

[TimeRuntimeContext](#Section_4c48cb5aae834962a0ac994008e08193) 278

[TimeScaleBehaviorAtom](#Section_4e1b5b50334d4aa5a00c4d95f087b148) 302

[TimeScaleBehaviorContainer](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a) 302

[TimeSequenceDataAtom](#Section_342b92a273df4b0b9878862f3532d570) 332

[TimeSetBehaviorAtom](#Section_f8876381cf7f4d2b9888965e2929c9dc) 327

[TimeSetBehaviorContainer](#Section_5428095fe4c443d0ad36b8b240e1338b) 304

[TimeStringListContainer](#Section_99109d34b306454e8e19da1f090cedd9) 273

[TimeSubType](#Section_ac877ddb3911491f8026d11051aa0b63) 245

[TimeVariant](#Section_8080ab7d824644d882c5a20d1b92dc6c) 336

[TimeVariant4Behavior](#Section_758f23158ef74f1d81da41ed4ab6683a) 275

[TimeVariant4TimeNode](#Section_1cbe764818fe4205b2c738163c85daf7) 242

[TimeVariantBool](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) 337

[TimeVariantFloat](#Section_8b7a8b5faf3841f182e2690112fd633c) 338

[TimeVariantInt](#Section_d9647022f6834f1a9267cc8519053318) 337

[TimeVariantString](#Section_c53f2602385449249a6349400ec6255c) 339

[VisualElementAtom](#Section_7b47864505d44a2eb21ebbf183e3f73d) 281

[VisualPageAtom](#Section_4ecd8e2993c14393a31c80a8ccd529ce) 281

[VisualShapeAtom](#Section_a274411d0faa4993b202a7510a93c881) 283

[VisualShapeChartElementAtom](#Section_660780f345414850bae696b8ffa7d645) 283

[VisualShapeGeneralAtom](#Section_e3f4be5088fd43fdb68f82f2743e92ea) 284

[VisualShapeOrSoundAtom](#Section_980f64aba892406bb4696299033ade3c) 282

[VisualSoundAtom](#Section_8cf2f3366e294368b5f1a21e8779f3af) 282

[AnimationInfoAtom animation type](#Section_4361cc1fcd514e61a451d252bf8e1069) 215

[AnimationInfoContainer animation type](#Section_a35de8fea76b43fc8e53ebcff8843705) 214

[AnimBuildTypeEnum enumeration](#Section_ebc572643737436da80ec774afae16e8) 461

[Applicability](#section_ae11e9036d4243759a4aa6f601081716) 28

[AuthorNameAtom comment author type](#Section_7b27b62888e14066b7778b6fe9f43ae1) 98

B

Basic type

[BlipRef](#Section_402ab14f12cf4df197aae6120f082bc7) 34

[bool1](#Section_bab65619e61c4616aab01313e15978fb) 34

[BulletSize](#Section_8febb693899148419c9e3622cb064d50) 34

[char2](#Section_2bd860f7f6144ed0a0ad5520e82856b7) 34

[ExHyperlinkId](#Section_42b7d88ae81644a385baad5586c7470e) 34

[ExHyperlinkIdRef](#Section_c2068363765343ecb8bb746532d66c6e) 35

[ExObjId](#Section_de24f7263ecb492d901b568a57c02eb4) 35

[ExObjIdRef](#Section_019cfee017eb4946ac81d88c6d170c0b) 35

[FileOrDirNameFragment](#Section_8870f902a03744bebb4ca91dfb82f2e4) 35

[FontIndexRef](#Section_75b7196f2d274aefb8415695fe584140) 35

[FontIndexRef10](#Section_7c6b57e1753c43faa37155540f554a60) 35

[HttpUrl](#Section_5984700489424f88a929fcfd49289bd3) 35

[IndentLevel](#Section_a6729542681c455bbdfdff5dec372e8c) 35

[MachineName](#Section_732274e8110340bfa451b1af4e703922) 36

[MarginOrIndent](#Section_ab67e36095f442289b23fea825377c95) 36

[MasterId](#Section_fa12046c7ff945418f763ed799dcffc4) 36

[MasterIdRef](#Section_ac1a16ba424a4f51b11d2914281bdfa5) 36

[NotesId](#Section_a2ed19fb4b5b4f938ef9baa2284ecd2b) 36

[NotesIdRef](#Section_ac43d4cb9e9d4a2cadb44f3da8381d8e) 36

[ParaSpacing](#Section_f3952baf27cc40f2918b86e42159e0a4) 36

[PersistIdRef](#Section_7fbfdcc25bb148eeb886357d39fce18f) 37

[PrintableAnsiString](#Section_bcde30fd302f4bf8abf4963b87ad40b3) 37

[PrintableUnicodeString](#Section_7b3104aabe314358b31039775872b257) 37

[SlideId](#Section_747d514b9d774a728b61fe226882944c) 37

[SlideIdRef](#Section_74a76957a2534455b8a4f82e650808fb) 38

[SmartTagIndex](#Section_9ab29cb27b03495b94b704cd42c076f4) 38

[SoundIdRef](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) 38

[TabCrLfPrintableUnicodeString](#Section_1a867a3571714f09b56760dea80412f2) 38

[TabSize](#Section_8b1533a8e2104bcebb11fdb1301a27bc) 38

[TextPosition](#Section_7f3c80c201d94cb997f2adb082b01a35) 38

[TxLCID](#Section_118aee24b6cd415cbc7e756ea0dfcd2d) 39

[UncOrLocalPath](#Section_dd863c41d58d487381f39a6cb84a718c) 39

[UncPath](#Section_c6b4538aca1544e18f013311f5d28071) 39

[UncPathOrHttpUrl](#Section_f3d6c1dc5dec437898017ff13a00f248) 39

[UnicodeString](#Section_069fadd944684ce28f0e8b08d6e319ea) 39

[Utf8UnicodeString](#Section_d28ec6ef8a0e4351b4b8ec5c70ccdd76) 39

[BCArchiveDirAtom broadcast type](#Section_cfc1123f2cae404789d19f70b21c7d37) 83

[BCAsdFileNameAtom broadcast type](#Section_b7946e738685414aae7bb6aaa9011808) 90

[BCBroadcastDateTimeAtom broadcast type](#Section_559aeb29dff8469780778f6a81f8e02b) 89

[BCChatUrlAtom broadcast type](#Section_c8b8114bc07849078613e759997bb455) 83

[BCContactAtom broadcast type](#Section_2c5c4e52addc40249d72817236b04f86) 80

[BCDescriptionAtom broadcast type](#Section_ec0f01d0a3b3455eae9b2442a78c67f7) 79

[BCEmailAddressAtom broadcast type](#Section_d01fcb8e7c574d7aa8e3c906e8afcd6f) 81

[BCEmailNameAtom broadcast type](#Section_1305677b209947069db3eb4133841122) 82

[BCEntryIDAtom broadcast type](#Section_87a49d205b7640cba4df1cbd507c42fe) 91

[BCNetShowFilesBaseDirAtom broadcast type](#Section_6c370c4420db41d687ce9cd5cfdb03bb) 84

[BCNetShowFilesDirAtom broadcast type](#Section_3029ca8ef20642db97c961fa0b6a8673) 85

[BCNetShowServerNameAtom broadcast type](#Section_794f6bfb3a6242fe997c299758084615) 85

[BCPptFilesBaseDirAtom broadcast type](#Section_3e60a89e381c41a581e6488d7a0fb58c) 86

[BCPptFilesBaseUrlAtom broadcast type](#Section_b43dce86be6042cda1cec6d7bd9b9c06) 87

[BCPptFilesDirAtom broadcast type](#Section_86cd0cd5cc864029ad7d6fd3b90ecf04) 87

[BCPresentationNameAtom broadcast type](#Section_2e98de7a7bb14660aac57b7cc6b5fca0) 89

[BCRexServerNameAtom broadcast type](#Section_4a10f915e5434368811fd601ead00716) 81

[BCSpeakerAtom broadcast type](#Section_813f0adc905c479293646eb4084ee5f1) 79

[BCTitleAtom broadcast type](#Section_b23020bf56be4dcbac021f5c1810a9fe) 78

[BCUserNameAtom broadcast type](#Section_35dcadecfa5b43cbb611a77144bf576f) 88

[Behavior types in animation](#section_a7f2e25fe1f14d16b54e32e10413bc04) 24

[BinaryTagDataBlob type](#Section_5eba9e3ad09a4d058e5bf148f44021a4) 456

[BlipCollection9Container text type](#Section_8a93931e05c148be8824deb1c4489c14) 399

[BlipEntityAtom text type](#Section_f1aeacfe24af425c8bb13333b4f8e7f6) 399

[BlipRef basic type](#Section_402ab14f12cf4df197aae6120f082bc7) 34

[BookmarkCollectionContainer summary info type](#Section_7effe2aab7ab4318884b5b19c12e0ec7) 138

[BookmarkEntityAtom summary info type](#Section_a2f2dfbe96e6466eb37b3310416a47ec) 140

[BookmarkEntityAtomContainer summary info type](#Section_ce4e89a1983e45e997040f804e1b84cd) 139

[BookmarkSeedAtom summary info type](#Section_0fc3da910db242eb9128ca850db20ab6) 138

[BookmarkValueAtom summary info type](#Section_4dc746d99d91462396eaa1256e728534) 141

[bool1 basic type](#Section_bab65619e61c4616aab01313e15978fb) 34

Broadcast type

[BCArchiveDirAtom](#Section_cfc1123f2cae404789d19f70b21c7d37) 83

[BCAsdFileNameAtom](#Section_b7946e738685414aae7bb6aaa9011808) 90

[BCBroadcastDateTimeAtom](#Section_559aeb29dff8469780778f6a81f8e02b) 89

[BCChatUrlAtom](#Section_c8b8114bc07849078613e759997bb455) 83

[BCContactAtom](#Section_2c5c4e52addc40249d72817236b04f86) 80

[BCDescriptionAtom](#Section_ec0f01d0a3b3455eae9b2442a78c67f7) 79

[BCEmailAddressAtom](#Section_d01fcb8e7c574d7aa8e3c906e8afcd6f) 81

[BCEmailNameAtom](#Section_1305677b209947069db3eb4133841122) 82

[BCEntryIDAtom](#Section_87a49d205b7640cba4df1cbd507c42fe) 91

[BCNetShowFilesBaseDirAtom](#Section_6c370c4420db41d687ce9cd5cfdb03bb) 84

[BCNetShowFilesDirAtom](#Section_3029ca8ef20642db97c961fa0b6a8673) 85

[BCNetShowServerNameAtom](#Section_794f6bfb3a6242fe997c299758084615) 85

[BCPptFilesBaseDirAtom](#Section_3e60a89e381c41a581e6488d7a0fb58c) 86

[BCPptFilesBaseUrlAtom](#Section_b43dce86be6042cda1cec6d7bd9b9c06) 87

[BCPptFilesDirAtom](#Section_86cd0cd5cc864029ad7d6fd3b90ecf04) 87

[BCPresentationNameAtom](#Section_2e98de7a7bb14660aac57b7cc6b5fca0) 89

[BCRexServerNameAtom](#Section_4a10f915e5434368811fd601ead00716) 81

[BCSpeakerAtom](#Section_813f0adc905c479293646eb4084ee5f1) 79

[BCTitleAtom](#Section_b23020bf56be4dcbac021f5c1810a9fe) 78

[BCUserNameAtom](#Section_35dcadecfa5b43cbb611a77144bf576f) 88

[BroadcastDocInfo9Container](#Section_e48938ffa37e4054ad394315cabbbfe0) 75

[BroadcastDocInfoAtom](#Section_53cdb990207c44bfaa2bb9852c84c0a1) 91

[BroadcastDocInfo9Container broadcast type](#Section_e48938ffa37e4054ad394315cabbbfe0) 75

[BroadcastDocInfoAtom broadcast type](#Section_53cdb990207c44bfaa2bb9852c84c0a1) 91

[Build order in animation](#section_585383b874df4c03adc41f6ce4809fa1) 25

[BuildAtom animation type](#Section_baa3c302b96c4f0b851708c50c38952b) 228

[BuildListContainer animation type](#Section_48ffef8e5b8d4711a598cfa1f9fcb252) 226

[BuildListSubContainer animation type](#Section_23d80d2c186d4f918ef0ccf083ddb94f) 226

[BuildTypeEnum enumeration](#Section_c197f4ecca244672933455a17509fef6) 463

[BulletFlags text type](#Section_06ef8761a2344e81892f3d4a2f789529) 358

[BulletSize basic type](#Section_8febb693899148419c9e3622cb064d50) 34

[Byte ordering](#section_d01b023b5fc64eea9fde0559e44a5ef1) 27

C

[CFMasks text type](#Section_bbca8581d0114293a375b209523cf962) 351

[CFStyle text type](#Section_3ea010b90ef94c059982618130ca66cd) 352

[Change tracking](#section_c62a2a71e5de490caa6ed3127da48a08) 634

[char2 basic type](#Section_2bd860f7f6144ed0a0ad5520e82856b7) 34

[Character formatting example](#section_d88c020e67024be69f54220106a971d6) 612

[ChartBuildAtom animation type](#Section_f3f0965c0aaf43099601fc33308ff0aa) 232

[ChartBuildContainer animation type](#Section_241274967eae4564825b186f6360ffcc) 231

[ChartBuildEnum enumeration](#Section_5f2588d86ede457eb059b27561da0ab4) 463

[ClientVisualElementContainer animation type](#Section_80b3266a1fe64140acef0483ac355c89) 280

[ClipboardNameAtom external object type](#Section_203232fa72dd465b81cd48cda50d3865) 415

[ColorIndexStruct structure](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) 457

[ColorModeEnum enumeration](#Section_47630627706e4e86a0ba45ea90837cec) 464

[ColorStruct structure](#Section_473e1e57703f4497a57eea75f0746c1f) 457

Comment author type

[AuthorNameAtom](#Section_7b27b62888e14066b7778b6fe9f43ae1) 98

[CommentIndex10Atom](#Section_d86171f5075d481c9593151aee6465ff) 99

[CommentIndex10Container](#Section_0655d45268fc400fbb377a9157f09126) 97

[Comment10Atom slide type](#Section_75f276597c4b4bf3ad31d5e221c24494) 178

[Comment10AuthorAtom slide type](#Section_e6a12f24381941caa4c6df5065ca75ec) 176

[Comment10AuthorInitialAtom slide type](#Section_e4516e96f95c43589e69c7e58ef19061) 177

[Comment10Container slide type](#Section_1a15453d859f48ee8dcd4d51ab9227f8) 175

[Comment10TextAtom slide type](#Section_509e23de68384693b586dace9899c2c8) 177

[CommentIndex10Atom comment author type](#Section_d86171f5075d481c9593151aee6465ff) 99

[CommentIndex10Container comment author type](#Section_0655d45268fc400fbb377a9157f09126) 97

[Conditional properties](#section_5fc44075e8f34104b58189f1056e5580) 24

[ConditionEnum enumeration](#Section_a6a1754c4001423a8d0ee62630705624) 464

[CopyrightAtom summary info type](#Section_9d4029f9d39c4f59910ada60d75c46db) 136

[CryptSession10Container file structure](#Section_b096333444084621879aef9c54551fd8) 45

[current user stream](#section_76cfa65707a6464b81ab4c017c611f64) 29

[CurrentUserAtom file structure](#Section_940d5700e4d74fc0ab48fed5dbc48bc1) 40

[custom XML data storage](#section_ec770c0133214044a3bf059525a90d8a) 33

D

[DateTimeMCAtom text type](#Section_668ab84bf0b24496af11b9d1b04e840a) 379

[DateTimeStruct structure](#Section_2da0b9bf164f403dbf1bf8b83b2af166) 458

[DefaultRulerAtom text type](#Section_f126079c590540fbb2d70f478adb44b8) 362

Details

[AnimAfterEffectEnum enumeration](#Section_4d043d499e804992884f02375f6bdcd3) 461

[AnimationInfoAtom animation type](#Section_4361cc1fcd514e61a451d252bf8e1069) 215

[AnimationInfoContainer animation type](#Section_a35de8fea76b43fc8e53ebcff8843705) 214

[AnimBuildTypeEnum enumeration](#Section_ebc572643737436da80ec774afae16e8) 461

[AuthorNameAtom comment author type](#Section_7b27b62888e14066b7778b6fe9f43ae1) 98

[BCArchiveDirAtom broadcast type](#Section_cfc1123f2cae404789d19f70b21c7d37) 83

[BCAsdFileNameAtom broadcast type](#Section_b7946e738685414aae7bb6aaa9011808) 90

[BCBroadcastDateTimeAtom broadcast type](#Section_559aeb29dff8469780778f6a81f8e02b) 89

[BCChatUrlAtom broadcast type](#Section_c8b8114bc07849078613e759997bb455) 83

[BCContactAtom broadcast type](#Section_2c5c4e52addc40249d72817236b04f86) 80

[BCDescriptionAtom broadcast type](#Section_ec0f01d0a3b3455eae9b2442a78c67f7) 79

[BCEmailAddressAtom broadcast type](#Section_d01fcb8e7c574d7aa8e3c906e8afcd6f) 81

[BCEmailNameAtom broadcast type](#Section_1305677b209947069db3eb4133841122) 82

[BCEntryIDAtom broadcast type](#Section_87a49d205b7640cba4df1cbd507c42fe) 91

[BCNetShowFilesBaseDirAtom broadcast type](#Section_6c370c4420db41d687ce9cd5cfdb03bb) 84

[BCNetShowFilesDirAtom broadcast type](#Section_3029ca8ef20642db97c961fa0b6a8673) 85

[BCNetShowServerNameAtom broadcast type](#Section_794f6bfb3a6242fe997c299758084615) 85

[BCPptFilesBaseDirAtom broadcast type](#Section_3e60a89e381c41a581e6488d7a0fb58c) 86

[BCPptFilesBaseUrlAtom broadcast type](#Section_b43dce86be6042cda1cec6d7bd9b9c06) 87

[BCPptFilesDirAtom broadcast type](#Section_86cd0cd5cc864029ad7d6fd3b90ecf04) 87

[BCPresentationNameAtom broadcast type](#Section_2e98de7a7bb14660aac57b7cc6b5fca0) 89

[BCRexServerNameAtom broadcast type](#Section_4a10f915e5434368811fd601ead00716) 81

[BCSpeakerAtom broadcast type](#Section_813f0adc905c479293646eb4084ee5f1) 79

[BCTitleAtom broadcast type](#Section_b23020bf56be4dcbac021f5c1810a9fe) 78

[BCUserNameAtom broadcast type](#Section_35dcadecfa5b43cbb611a77144bf576f) 88

[BinaryTagDataBlob type](#Section_5eba9e3ad09a4d058e5bf148f44021a4) 456

[BlipCollection9Container text type](#Section_8a93931e05c148be8824deb1c4489c14) 399

[BlipEntityAtom text type](#Section_f1aeacfe24af425c8bb13333b4f8e7f6) 399

[BlipRef basic type](#Section_402ab14f12cf4df197aae6120f082bc7) 34

[BookmarkCollectionContainer summary info type](#Section_7effe2aab7ab4318884b5b19c12e0ec7) 138

[BookmarkEntityAtom summary info type](#Section_a2f2dfbe96e6466eb37b3310416a47ec) 140

[BookmarkEntityAtomContainer summary info type](#Section_ce4e89a1983e45e997040f804e1b84cd) 139

[BookmarkSeedAtom summary info type](#Section_0fc3da910db242eb9128ca850db20ab6) 138

[BookmarkValueAtom summary info type](#Section_4dc746d99d91462396eaa1256e728534) 141

[bool1 basic type](#Section_bab65619e61c4616aab01313e15978fb) 34

[BroadcastDocInfo9Container broadcast type](#Section_e48938ffa37e4054ad394315cabbbfe0) 75

[BroadcastDocInfoAtom broadcast type](#Section_53cdb990207c44bfaa2bb9852c84c0a1) 91

[BuildAtom animation type](#Section_baa3c302b96c4f0b851708c50c38952b) 228

[BuildListContainer animation type](#Section_48ffef8e5b8d4711a598cfa1f9fcb252) 226

[BuildListSubContainer animation type](#Section_23d80d2c186d4f918ef0ccf083ddb94f) 226

[BuildTypeEnum enumeration](#Section_c197f4ecca244672933455a17509fef6) 463

[BulletFlags text type](#Section_06ef8761a2344e81892f3d4a2f789529) 358

[BulletSize basic type](#Section_8febb693899148419c9e3622cb064d50) 34

[CFMasks text type](#Section_bbca8581d0114293a375b209523cf962) 351

[CFStyle text type](#Section_3ea010b90ef94c059982618130ca66cd) 352

[char2 basic type](#Section_2bd860f7f6144ed0a0ad5520e82856b7) 34

[ChartBuildAtom animation type](#Section_f3f0965c0aaf43099601fc33308ff0aa) 232

[ChartBuildContainer animation type](#Section_241274967eae4564825b186f6360ffcc) 231

[ChartBuildEnum enumeration](#Section_5f2588d86ede457eb059b27561da0ab4) 463

[ClientVisualElementContainer animation type](#Section_80b3266a1fe64140acef0483ac355c89) 280

[ClipboardNameAtom external object type](#Section_203232fa72dd465b81cd48cda50d3865) 415

[ColorIndexStruct structure](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) 457

[ColorModeEnum enumeration](#Section_47630627706e4e86a0ba45ea90837cec) 464

[ColorStruct structure](#Section_473e1e57703f4497a57eea75f0746c1f) 457

[Comment10Atom slide type](#Section_75f276597c4b4bf3ad31d5e221c24494) 178

[Comment10AuthorAtom slide type](#Section_e6a12f24381941caa4c6df5065ca75ec) 176

[Comment10AuthorInitialAtom slide type](#Section_e4516e96f95c43589e69c7e58ef19061) 177

[Comment10Container slide type](#Section_1a15453d859f48ee8dcd4d51ab9227f8) 175

[Comment10TextAtom slide type](#Section_509e23de68384693b586dace9899c2c8) 177

[CommentIndex10Atom comment author type](#Section_d86171f5075d481c9593151aee6465ff) 99

[CommentIndex10Container comment author type](#Section_0655d45268fc400fbb377a9157f09126) 97

[ConditionEnum enumeration](#Section_a6a1754c4001423a8d0ee62630705624) 464

[CopyrightAtom summary info type](#Section_9d4029f9d39c4f59910ada60d75c46db) 136

[CryptSession10Container file structure](#Section_b096333444084621879aef9c54551fd8) 45

[current user stream](#section_76cfa65707a6464b81ab4c017c611f64) 29

[CurrentUserAtom file structure](#Section_940d5700e4d74fc0ab48fed5dbc48bc1) 40

[custom XML data storage](#section_ec770c0133214044a3bf059525a90d8a) 33

[DateTimeMCAtom text type](#Section_668ab84bf0b24496af11b9d1b04e840a) 379

[DateTimeStruct structure](#Section_2da0b9bf164f403dbf1bf8b83b2af166) 458

[DefaultRulerAtom text type](#Section_f126079c590540fbb2d70f478adb44b8) 362

[DiagramBuildAtom animation type](#Section_f23973b309df492e99149cd331f8a5bc) 233

[DiagramBuildContainer animation type](#Section_fb5d0358ee2644e8bf0e04d035401fd2) 233

[DiagramBuildEnum enumeration](#Section_65a3ad6bba9b4c92a82a7f8a62203273) 464

[DiffRecordHeaders document comparison type](#Section_8e2858264cf64479bc4dff5ac5aed8de) 104

[DiffTree10Container document comparison type](#Section_ea695ebc48d847e7a77e747ecd4e8d75) 102

[DiffTypeEnum enumeration](#Section_ef8a54b2da854dbab9a60131d8f579c7) 465

[digital signature storage](#section_fce5c4a84fa244aeb41ef7f74dc93511) 33

[DocDiff10Container document comparison type](#Section_3c109426135949a0a42d2a79bf6f0d90) 105

[DocInfoListContainer document type](#Section_f0fed863362f43a0ae7872ae15e56171) 52

[DocInfoListSubContainerOrAtom document type](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3) 52

[DocProgBinaryTagContainer document tag info type](#Section_96d2ece1800548ebbbae0fd8f55f2f63) 142

[DocProgBinaryTagSubContainerOrAtom document tag info type](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d) 143

[DocProgTagsContainer document tag info type](#Section_6965e9a7d4314707b789081a6a9c7b8f) 141

[DocProgTagsSubContainerOrAtom document tag info type](#Section_0d1a5da5dcab4b3f8c97b79d74321e37) 142

[DocRoutingSlipAtom type](#Section_8dbe7f1cb2374383a9931a67e660faf0) 434

[DocRoutingSlipString type](#Section_36c239f5e4d84c66b35a75d1bfec5bac) 436

[DocToolbarStates10Atom document comparison type](#Section_e7b4619ec9ca40da99c76b9cdfe472d7) 99

[document summary information stream](#section_abdf642437c44ac0b4cc8cb5aed11497) 33

[DocumentAtom document type](#Section_121f272834974a0a829e6f416fee2ee6) 49

[DocumentContainer document type](#Section_6254c4d152174e16b20dc04ddcce31c9) 46

[DocumentTextInfoContainer text type](#Section_6a08728e04f84cc1831773cefa178870) 339

[DrawingContainer slide type](#Section_0595b49fda964402b3531f766e9d548f) 166

[DrawingGroupContainer document type](#Section_1daf91b135314e55ba6a2e271de975c0) 51

[ElementTypeEnum enumeration](#Section_9d254b2a9ff04b99b03626152848bf69) 466

[encrypted summary information stream](#section_8faaf589abed4d79a758529ce59dfcfd) 33

[EndDocumentAtom document type](#Section_ac2a2b3b4ccc4f3ab17252dd742b5475) 58

[EnvelopeData9Atom type](#Section_a156cedf061d45678f2b0fa9cb08a7ee) 437

[EnvelopeFlags9Atom type](#Section_692189fb057b48e6b195a7689e8e3c0f) 437

[ExAviMovieContainer external object type](#Section_b434673370da4a3098d7b2e026d0d7cb) 407

[ExCDAudioAtom external object type](#Section_4dfd1e1980134040848ea7ecdfa6bd00) 410

[ExCDAudioContainer external object type](#Section_fbe8267c2370443c9d6499b24d4248e9) 409

[ExColorFollowEnum enumeration](#Section_ebecbab3a3e34877a3bffabc10d90432) 466

[ExControlAtom external object type](#Section_0a31df487ebb461a967e42003b8e91bd) 412

[ExControlContainer external object type](#Section_4a873d5bdd274b29bdaa705bb2ef3d92) 411

[ExControlStg external object type](#Section_dc8d8818de0e463e9f26a9bad364245d) 431

[ExControlStgCompressedAtom external object type](#Section_ed65e33859ad4e85ba8abad23a877120) 432

[ExControlStgUncompressedAtom external object type](#Section_5ce0969f14574174b6cf845915d4f564) 431

[ExHyperlink9Container external object type](#Section_c021ee00af9c4673bd69e3d49f3668df) 419

[ExHyperlinkAtom external object type](#Section_c760a33c472f449cb1db5dc5fe59ace1) 416

[ExHyperlinkContainer external object type](#Section_3145d686e4e34eb2849f03c4cf410d42) 415

[ExHyperlinkFlagsAtom external object type](#Section_55f45d4439fd404095061f14878ce2ac) 421

[ExHyperlinkId basic type](#Section_42b7d88ae81644a385baad5586c7470e) 34

[ExHyperlinkIdRef basic type](#Section_c2068363765343ecb8bb746532d66c6e) 35

[ExHyperlinkRefAtom external object type](#Section_37fa88095b274f9e95a669b633d191ea) 420

[ExMCIMovieContainer external object type](#Section_e6094ce87fb74c91aa111a02f1ee03d8) 421

[ExMediaAtom external object type](#Section_3239ce9f932f4e4f8299333e907a6ccc) 408

[ExMIDIAudioContainer external object type](#Section_43c4d032436f4108a9ae4ea1d339db8b) 422

[ExObjId basic type](#Section_de24f7263ecb492d901b568a57c02eb4) 35

[ExObjIdRef basic type](#Section_019cfee017eb4946ac81d88c6d170c0b) 35

[ExObjListAtom external object type](#Section_ebd9be5b3df44c2c99ba84923f01a322) 406

[ExObjListContainer external object type](#Section_3b997d4d79514478acc51c9adbc2627a) 405

[ExObjListSubContainer external object type](#Section_bc182153f27a4f5fb7e41ae1270ede28) 406

[ExObjRefAtom shape type](#Section_d6e17fee7d53453f962bb671a4f8869f) 202

[ExOleEmbedAtom external object type](#Section_003441ca0e10403b92c3ebcd7fcc6a07) 424

[ExOleEmbedContainer external object type](#Section_c687090ca3594ffc918e415117e10229) 423

[ExOleLinkAtom external object type](#Section_d14ae8e499c34847941c7d7c258f7691) 426

[ExOleLinkContainer external object type](#Section_5311e92722f04e559f439142998efbd1) 425

[ExOleObjAtom external object type](#Section_a35170168e3245859a42adae02eea798) 413

[ExOleObjStg external object type](#Section_21e29c16df3a435280172c48864d2548) 429

[ExOleObjStgCompressedAtom external object type](#Section_305e541f2c9149c5a7424955330fd2b9) 430

[ExOleObjStgUncompressedAtom external object type](#Section_23491dfff2694a5285129d7244d43cc8) 429

[ExOleObjSubTypeEnum enumeration](#Section_9851ea47c044476a93026904de72d279) 467

[ExOleObjTypeEnum enumeration](#Section_e71fc7fb94a64feab7e657ddf07800bd) 467

[ExternalObjectDiffContainer document comparison type](#Section_abb251c1a17a419a8519e799dc1e4721) 120

[ExtTimeNodeContainer animation type](#Section_83d39c580d3046a4bffb188d792cb5a7) 234

[ExVideoContainer external object type](#Section_342b66efd81d45c0aad3414545cb7ae4) 407

[ExWAVAudioEmbeddedAtom external object type](#Section_abc3f20816ed4945a8443eec428cc780) 428

[ExWAVAudioEmbeddedContainer external object type](#Section_2b70ee326217416b8841540f51f8e3af) 427

[ExWAVAudioLinkContainer external object type](#Section_e16f324952764f8fa4b4483f6aa08cf1) 428

[file stream structure](#section_40592fe5a973455088d904246bcc9ecd) 29

[FileNameAtom publish type](#Section_2b13333268de4f7ab42d96bc0f130818) 95

[FileOrDirNameFragment basic type](#Section_8870f902a03744bebb4ca91dfb82f2e4) 35

[FilterPrivacyFlags10Atom document type](#Section_016a804e325546a7a353707c8232e542) 55

[FontCollection10Container text type](#Section_8c62fed6394f4c49ae8aa73c2a8026d1) 348

[FontCollectionContainer text type](#Section_88da04bf68384f879a87adf067543837) 346

[FontCollectionEntry text type](#Section_fb4d26df15c74f978d8f6c73ea98e91d) 346

[FontEmbedDataBlob type](#Section_09f6010a4a6d4ba7a05a1acab10322fd) 438

[FontEmbedFlags10Atom text type](#Section_ec7445456e724d648280d96ac7b28a04) 349

[FontEntityAtom text type](#Section_b5946b702fbc4f7ba119b31fcbeb1794) 347

[FontIndexRef basic type](#Section_75b7196f2d274aefb8415695fe584140) 35

[FontIndexRef10 basic type](#Section_7c6b57e1753c43faa37155540f554a60) 35

[FooterAtom header/footer type](#Section_be36887533e9490db832954eb800a240) 68

[FooterMCAtom text type](#Section_5a2fa1e2bc5f450b89d0b372a811313a) 378

[FriendlyNameAtom external object type](#Section_e8e62224b3be43b9b97a658257d6af67) 417

[GenericDateMCAtom text type](#Section_a212a37760444ec2a5948c59be237125) 386

[GridSpacing10Atom view info type](#Section_e40174dc118f46c38c6198f63d426f44) 125

[GuideAtom view info type](#Section_b5cc09d93f104eabb204ba88552dc1ec) 133

[HandoutContainer slide type](#Section_bf6d1f839023412089c3fb69e49d0212) 158

[HandoutRoundTripAtom slide type](#Section_245d3c1ee2b84468bea0464be6251e09) 159

[HashCode10Atom animation type](#Section_bd2afac84f484071ba1a346546e1bee7) 224

[HeaderAtom header/footer type](#Section_bdda477db94d4a4ebe1c35f78f68821c) 67

[HeaderFooterDiffContainer document comparison type](#Section_dc773f9fdf844d419f50b206d6662d50) 107

[HeaderMCAtom text type](#Section_d7ed28bf83ef45e5a57b2384f8b03423) 378

[HeadersFootersAtom header/footer type](#Section_5ba5b716138d46439dbdfa1382d25082) 66

[HSLColorBy animation type](#Section_30ad7500612f41628e7e55d0e38e43aa) 288

[HTMLDocInfo9Atom publish type](#Section_9f9b9371093248ffa775cac417c466ef) 93

[HTMLPublishInfo9Container publish type](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29) 94

[HTMLPublishInfoAtom publish type](#Section_4296eeb2c07643a29a23bf645a2054c6) 96

[HttpUrl basic type](#Section_5984700489424f88a929fcfd49289bd3) 35

[IndentLevel basic type](#Section_a6729542681c455bbdfdff5dec372e8c) 35

[IndexSchemeColor animation type](#Section_62ae89441ac84b6aaa5e0b1ea5583ace) 290

[InteractiveInfoActionEnum enumeration](#Section_61cd7fe2e7d440929d4c3c5b720e8330) 468

[InteractiveInfoAtom slide show type](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7) 196

[InteractiveInfoDiffContainer document comparison type](#Section_b3fac6098b6e4b67b7a200a41f8765d6) 121

[InteractiveInfoInstance slide show type](#Section_9225f32d5eb146b38ebd442bffded30d) 195

[InteractiveInfoJumpEnum enumeration](#Section_9466e4a7a80d42d4b6844f31463142b1) 468

[KeywordsAtom summary info type](#Section_a549e2ed7f644b4a927ea22e76ffd213) 136

[Kinsoku9Atom text type](#Section_1ad9ce1b530247c18706c137a541efe9) 344

[Kinsoku9Container text type](#Section_78abb8b8747b428ebfbac8f8ca6c6b38) 343

[KinsokuAtom text type](#Section_f4aeb62ddb3148ed9ab76369697a62b7) 342

[KinsokuContainer text type](#Section_d22fdfcfb0334a9ab4beabc379ad0039) 341

[KinsokuFollowingAtom text type](#Section_009ecdc1817c4fb0a286eebd73f8fd06) 343

[KinsokuLeadingAtom text type](#Section_2a0209cc48b34505a201853c17e88d65) 342

[LevelInfoAtom animation type](#Section_ada7819fc1d54331b64caba3db29ce4d) 230

[LinkedShape10Atom slide type](#Section_4ad01f52581d4163b6cebd48fdeba54f) 182

[LinkedSlide10Atom slide type](#Section_2a277bb42dbe493494c1004b7122ce4d) 180

[LinkToEnum enumeration](#Section_2f58ed281a7f43ceade7c2b04c74e522) 468

[LocationAtom external object type](#Section_6c05ffebaacd422bb931ec7b3e8b1ee3) 418

[MachineName basic type](#Section_732274e8110340bfa451b1af4e703922) 36

[MacroNameAtom slide show type](#Section_7f850503c5444c8798172f1368632b70) 197

[MainMasterContainer slide type](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8) 153

[MainMasterDiffContainer document comparison type](#Section_d9a1101e91ae43d7a5f9627c3e05f91a) 111

[MarginOrIndent basic type](#Section_ab67e36095f442289b23fea825377c95) 36

[MasterId basic type](#Section_fa12046c7ff945418f763ed799dcffc4) 36

[MasterIdRef basic type](#Section_ac1a16ba424a4f51b11d2914281bdfa5) 36

[MasterListDiff10ChildContainer document comparison type](#Section_b239ca536d684666a39450132c45aa7f) 111

[MasterListDiffContainer document comparison type](#Section_e4bc97ae22de423f8e2f333018ed65c0) 110

[MasterListWithTextContainer slide list type](#Section_18a9bc043307440ebbc2efcb75ee923d) 59

[MasterOrSlideContainer slide type](#Section_018cc2701573402aa3e8d83e8dc96813) 156

[MasterPersistAtom slide list type](#Section_ffcca362b8604a3d900e5c03f02c1775) 60

[MasterTextPropAtom text type](#Section_c80e1825db844e21a3d717068b1248c2) 404

[MasterTextPropRun text type](#Section_1454a4e7ef70445588261652b46394dd) 404

[MenuNameAtom external object type](#Section_39e69a141c4649deaab4ac78485c6de1) 414

[MetafileBlob type](#Section_743b32d37f84418091275d744ffb706b) 439

[ModifyPasswordAtom document type](#Section_6d703306994647f4b206794ddb90585f) 54

[MouseClickInteractiveInfoContainer slide show type](#Section_cc0910dd1aae4da9afa958a386333bcb) 195

[MouseClickTextInteractiveInfoAtom text type](#Section_1efdc2bfa11d40928128147b3602be87) 389

[MouseOverInteractiveInfoContainer slide show type](#Section_8714c89a4bb34fa581650742725cf755) 196

[MouseOverTextInteractiveInfoAtom text type](#Section_93a2cd280426415da67fec6f3f781a09) 390

[NamedShowAtom publish type](#Section_5962eaa99cc04996b9020b4477790727) 96

[NamedShowContainer slide show type](#Section_a397a8a306f54fe780ea10ead0e1aeb0) 186

[NamedShowDiffContainer document comparison type](#Section_51d270c9772b4d1d865e585cd0b5d86c) 108

[NamedShowListDiffContainer document comparison type](#Section_fff0a29d98ff478cb460e2fbe000ab7e) 107

[NamedShowNameAtom slide show type](#Section_41443c4148f440d58ec7e9306d25545c) 186

[NamedShowsContainer slide show type](#Section_a3d04187565b423f90c637d219781b0c) 185

[NamedShowSlidesAtom slide show type](#Section_b90394d690dd4557900ec250d1bfc4f9) 187

[NormalViewSetBarStates enumeration](#Section_9ead9648630049599db0bc8b74770e6c) 469

[NormalViewSetInfoAtom view info type](#Section_b906d23a45d244a2b486545f21676ecd) 126

[NormalViewSetInfoContainer view info type](#Section_5b7a13338de24c50a83838c389db3147) 125

[NotesAtom slide type](#Section_9bb3e3521014477bb286cd43127c3b74) 165

[NotesContainer slide type](#Section_50bfc0f7c1014c3287546ca59772b785) 157

[NotesDiffContainer document comparison type](#Section_2414449c9ca34ad29aabe195e96ce4df) 124

[NotesHeadersFootersContainer header/footer type](#Section_58fe42d1259e4f809a342567c565125e) 68

[NotesId basic type](#Section_a2ed19fb4b5b4f938ef9baa2284ecd2b) 36

[NotesIdRef basic type](#Section_ac43d4cb9e9d4a2cadb44f3da8381d8e) 36

[NotesListWithTextContainer slide list type](#Section_55453e3706744703bd8dfcaba335f840) 63

[NotesPersistAtom slide list type](#Section_b595ad14a46c4fccb4bd7298712043a4) 64

[NotesRoundTripAtom slide type](#Section_95d576adf038406283f1c8b31e01db00) 158

[NotesTextViewInfoContainer view info type](#Section_caacc34d988c4cbc99f7a4bdf808e723) 128

[NotesViewInfoContainer view info type](#Section_96636c7591464d128099f0f50e382b71) 134

[NoZoomViewInfoAtom view info type](#Section_377e8d7886934fecb31caa890909f4b3) 130

[OfficeArtClientAnchor shape type](#Section_37ee18c73c7c4adc91fbcb3b01789d72) 198

[OfficeArtClientAnchorData shape type](#Section_beecde28e2394d88b92c6e9dcf031e39) 199

[OfficeArtClientData shape type](#Section_ac3b454db5ea4da8a57c32fc08ed332a) 199

[OfficeArtClientTextbox text type](#Section_f50070dda4dc4edda446c4fcc5c80ace) 401

[OLEVerbEnum enumeration](#Section_d3f3afeef16e41e7b03832a789f2e85b) 469

[OutlineTextProps10Container text type](#Section_6efc6c99ea7546fc8b36ea94a8e3077f) 393

[OutlineTextProps10Entry text type](#Section_c7cff0baf7494282975f565a7601b0d4) 393

[OutlineTextProps11Container text type](#Section_bd93329d5087408e99027355d31ec82e) 394

[OutlineTextProps11Entry text type](#Section_0411bcbf955d4ae8a51a27128d8a04e1) 394

[OutlineTextProps9Container text type](#Section_6eb16c7f6b6848dbace37347326b3a9d) 391

[OutlineTextProps9Entry text type](#Section_e0d2c3b5c038439caaaee778a1c36c71) 392

[OutlineTextPropsHeaderExAtom text type](#Section_e75ff2cccd874d2e843a3fcaa4440b96) 392

[OutlineTextRefAtom text type](#Section_f120afe11b654deca2cec5f90fe8b317) 403

[OutlineViewInfoContainer view info type](#Section_39073741a8dd47bdb94f857a2850ff62) 130

[ParaBuildAtom animation type](#Section_8eeb2908927340e8bb4330d07220ba58) 228

[ParaBuildContainer animation type](#Section_4bd5c65e913445eead0d18b57d147c7e) 227

[ParaBuildEnum enumeration](#Section_54aa20499fb84e5293fbad4c95bc5f29) 469

[ParaBuildLevel animation type](#Section_18419a57831c4c22b620b2540292df6c) 230

[ParaSpacing basic type](#Section_f3952baf27cc40f2918b86e42159e0a4) 36

[PersistDirectoryAtom file structure](#Section_d10a093d860f409cb065aeb24b830505) 43

[PersistDirectoryEntry file structure](#Section_6214b5a67ca24a868a0e5fd3d3eff1c9) 44

[PersistIdRef basic type](#Section_7fbfdcc25bb148eeb886357d39fce18f) 37

[PersistOffsetEntry file structure](#Section_a056484a21324e1eaa546e387f9695cf) 44

[PerSlideHeadersFootersContainer slide type](#Section_0104cfcf37814fbb954d5cd43e2d4e35) 168

[PFMasks text type](#Section_2a02831a088b44e784c9c185ab314a71) 357

[PFWrapFlags text type](#Section_4f9ab03992704588b33f9d580a117a8f) 360

[PhotoAlbumFrameShapeEnum enumeration](#Section_3a61325ee32e4ccd88c8c0ab2e4cd410) 470

[PhotoAlbumInfo10Atom document type](#Section_2782f287ec64433182bc63fb6eb8c98e) 55

[PhotoAlbumLayoutEnum enumeration](#Section_78ebf4895eca4b088feb7c63f69817eb) 470

[PlaceholderAtom shape type](#Section_5a37fba11e7045d8bda4315730bd3c54) 203

[PlaceholderEnum enumeration](#Section_dbfd04be077644d9b408b07f4c951eaf) 471

[PlaceholderSize enumeration](#Section_557f629693464db5bdc05acbc5a33617) 472

[PointStruct structure](#Section_5faffdc98cdf4bd0a2289a122d01b3f2) 459

[PowerPoint document stream](#section_1fc22d5628f94818bd4567c2bf721ccf) 29

[PP10DocBinaryTagExtension document tag info type](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed) 146

[PP10ShapeBinaryTagExtension shape type](#Section_a5850b953d584723b94902c802af528d) 212

[PP10SlideBinaryTagExtension slide type](#Section_ccb82f60e1ae4379b1e000909bb70b17) 173

[PP11DocBinaryTagExtension document tag info type](#Section_662c3a59f11d4d3fb472c695b4e598a8) 149

[PP11ShapeBinaryTagExtension shape type](#Section_ab3d45de5d374cd69bece6983b085ad9) 213

[PP12DocBinaryTagExtension document tag info type](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7) 150

[PP12SlideBinaryTagExtension slide type](#Section_1d1704d76e3e472296c70fbe7ca8f682) 183

[PP9DocBinaryTagExtension document tag info type](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0) 143

[PP9ShapeBinaryTagExtension shape type](#Section_288d4b7c200a4fbfbfcbe60adba13db8) 211

[PP9SlideBinaryTagExtension slide type](#Section_0ee9570b80ec46f0889aec42dad58baf) 172

[PresAdvisorFlags9Atom document type](#Section_866dc2301b1947bca5a41160b18e846e) 53

[PrintableAnsiString basic type](#Section_bcde30fd302f4bf8abf4963b87ad40b3) 37

[PrintableUnicodeString basic type](#Section_7b3104aabe314358b31039775872b257) 37

[PrintOptionsAtom document type](#Section_38013adecfee4bbda443d84822a80173) 58

[PrintWhatEnum enumeration](#Section_3782bb37ad904ef3aa4bb78ebf578e94) 472

[ProgIDAtom external object type](#Section_4bfdd228254e40aba4970e0407079fd0) 414

[ProgStringTagContainer type](#Section_4c2f2168082c433d8356471fa54af929) 454

[RatioStruct structure](#Section_32cd4da38d474599ace5d608331e1214) 459

[RecolorEntry shape type](#Section_9270c7eca27544869096a599c1e3234a) 207

[RecolorEntryBrush shape type](#Section_2da771e4494f4258b73b6d011315a3ed) 208

[RecolorEntryColor shape type](#Section_c4059bd1b1474676ada89ca444130e07) 208

[RecolorEntryVariant shape type](#Section_b0b1882fc909422caa59ce136510bf0b) 208

[RecolorInfoAtom shape type](#Section_01ac11fb62734b36932d39b861eb144c) 205

[RecolorInfoDiffContainer document comparison type](#Section_f3301c55be65413c824042f97e72ae65) 119

[RecordHeader file structure](#Section_df2011940cd04dfbbf10eea353d8eabc) 40

[RecordType enumeration](#Section_38fb1fa50a62477a8b14178df22de812) 473

[RectStruct structure](#Section_8a58e3ae268242d082cda41c2999584e) 459

[ReviewerNameAtom document comparison type](#Section_5aa53fdfa0794ce2a27fa1af7106a427) 103

[RGBColor animation type](#Section_92e06186219841e59d3db426ad1adf4b) 289

[RGBColorBy animation type](#Section_34933da86c6e4a90bc499585875457a5) 288

[RoundTripAnimationAtom type](#Section_6360395dcf04485a920324d5ae5591ec) 439

[RoundTripAnimationHashAtom type](#Section_c10e75d664d04e53aa84a06134026ed4) 440

[RoundTripColorMappingAtom type](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) 441

[RoundTripCompositeMasterId12Atom type](#Section_ae0701f92b464b6c90a049e7cfb20a7e) 441

[RoundTripContentMasterId12Atom type](#Section_e9a4f7c3f3ac4ba2b94c59a93f77d11b) 442

[RoundTripContentMasterInfo12Atom type](#Section_15e1aa8993ac4f248e0e398ecec7897b) 443

[RoundTripCustomTableStyles12Atom type](#Section_fdb1834fa6d8409f83422152025ae8eb) 443

[RoundTripDocFlags12Atom type](#Section_97f683aea7b2430cb4e49b1cc518f35d) 444

[RoundTripHeaderFooterDefaults12Atom type](#Section_016741fdd7aa4958b577c81fe19c179b) 444

[RoundTripHFPlaceholder12Atom type](#Section_ec3baf39684b49d38850d5798f0a1915) 445

[RoundTripMainMasterRecord slide type](#Section_2a26ce591c7b4d5c840532847659490e) 156

[RoundTripNewPlaceholderId12Atom type](#Section_c13cfcfdd6964aecb1f2eafb3bd3977b) 446

[RoundTripNotesMasterTextStyles12Atom type](#Section_50f47937dbe0403eb93ed170d9b6ea0d) 446

[RoundTripOArtTextStyles12Atom type](#Section_92f10e186be94cc19e22fb24856f80d7) 447

[RoundTripOriginalMainMasterId12Atom type](#Section_4ffb4a9b891a41e689cdfd4312d08c90) 447

[RoundTripShapeCheckSumForCustomLayouts12Atom type](#Section_45644f02790a4d0c998e59ab5500c909) 448

[RoundTripShapeId12Atom type](#Section_a3e1963983784a1582db7453be42ddbe) 449

[RoundTripSlideRecord slide type](#Section_fe7a9588d2e044d1b9b1ac2962592448) 153

[RoundTripSlideSyncInfo12Container type](#Section_7ab552d5545048f6816b8cbc266d7803) 449

[RoundTripThemeAtom type](#Section_a50e597e248a41c8a1c370fd0988d609) 452

[RTFDateTimeMCAtom text type](#Section_7aa3736d15cf43b38b450dddf856d946) 386

[ScalingStruct structure](#Section_b2cf89e0d255468fa571effd2b34b5b0) 460

[SchemeListElementColorSchemeAtom slide type](#Section_cf7562a6f79f4705a2fb5f5d84bea12d) 167

[ScreenTipAtom external object type](#Section_d2e1c18127b841e088ef702c287fda1b) 420

[ServerIdAtom type](#Section_b008a1461e9e4e4aa0a39a6dd55bbf8a) 450

[ShapeClientRoundtripDataSubContainerOrAtom shape type](#Section_92bce4f0921c4b5b92d37ade03646250) 201

[ShapeDiffContainer document comparison type](#Section_c1ec712373fc4f01a3085935234abe33) 115

[ShapeFlags10Atom shape type](#Section_8eb485b34df1413cbb3264ce5064054d) 202

[ShapeFlagsAtom shape type](#Section_87961734a0f44ba6b4d7cb28d7d6ee78) 201

[ShapeListDiffContainer document comparison type](#Section_21ff0b659bae474294bf5e4af99a6b1b) 115

[ShapeProgBinaryTagContainer shape type](#Section_f72ef91182fc456d9392759ea3940516) 210

[ShapeProgBinaryTagSubContainerOrAtom shape type](#Section_28c25608369e42a798166b3515a4ecca) 211

[ShapeProgTagsContainer shape type](#Section_f8ad5874193e43f08400246b29b606bf) 210

[ShapeProgTagsSubContainerOrAtom shape type](#Section_a9b8cd9324d3426f9c80bd46a72fa2b7) 210

[signatures stream](#section_4a3db6efa3ae495aa733fedc92660a00) 34

[SlideAtom slide type](#Section_57e11e6ce5504c4380b672731eee8abd) 160

[SlideContainer slide type](#Section_4cac097673d04ab3a70be98b3cf1c312) 151

[SlideDiffContainer document comparison type](#Section_899d425cba9b4a3eb5ab64f65b2897f3) 112

[SlideFlags slide type](#Section_a840eba8ed0347a0a0c9769236e21a0b) 165

[SlideFlags10Atom slide type](#Section_dcf6722b32014b61b109384b7f80f559) 179

[SlideHeadersFootersContainer header/footer type](#Section_c1ff52ebb70a4de3a03385eefc7a25a8) 65

[SlideId basic type](#Section_747d514b9d774a728b61fe226882944c) 37

[SlideIdRef basic type](#Section_74a76957a2534455b8a4f82e650808fb) 38

[SlideLayoutType enumeration](#Section_df8f3d7bdb6747dc8c8920f5cbbf0fa9) 482

[SlideLibUrlAtom type](#Section_4f0d845d959e4deea2d7a4701a51a0b9) 451

[SlideListDiffContainer document comparison type](#Section_1d3c490c38884f5d91e4cc059baf4a65) 109

[SlideListEntry10Atom document comparison type](#Section_29e7a9d4974845d6abaa921772ca43a3) 101

[SlideListTable10Container document comparison type](#Section_42463f5b55c7457598467f4b412228aa) 100

[SlideListTableSize10Atom document comparison type](#Section_e0b1efea693c480fa45b857c54124a2a) 101

[SlideListWithTextContainer slide list type](#Section_307e6d12730447a8acbd3e7b8041ad3c) 60

[SlideListWithTextSubContainerOrAtom slide list type](#Section_fc198575e6fc420f86936714469eb710) 61

[SlideNameAtom slide type](#Section_3b52355ff13f4a20b967be4b42dc6ac5) 169

[SlideNumberMCAtom text type](#Section_3f61519995ec48c0acb4dd98f0f29560) 377

[SlidePersistAtom slide list type](#Section_48dce41296924f93aeb73d9fdd3a0a5a) 62

[SlideProgBinaryTagContainer slide type](#Section_e25eb8d2627e4104b293fc8ed82a098c) 171

[SlideProgBinaryTagSubContainerOrAtom slide type](#Section_ac9aa6bd3c1549bd81d95b8bfd966053) 171

[SlideProgTagsContainer slide type](#Section_c2263e42180e4249bd93a421efd8719b) 170

[SlideProgTagsSubContainerOrAtom slide type](#Section_2bc67516d5ab4d9d86761a825c64c2a8) 171

[SlideSchemeColorSchemeAtom slide type](#Section_9cfca750dabb4967b1332583a9f8c392) 167

[SlideShowDiffContainer document comparison type](#Section_68fde33d71a0419380509f0dbd2301de) 123

[SlideShowDocInfoAtom slide show type](#Section_6d266473cadd49ada3cb9f3601365b9e) 184

[SlideShowSlideInfoAtom slide show type](#Section_10dc4455c5d8472086468cde8644a040) 188

[SlideSizeEnum enumeration](#Section_2e9fc1fd73db465f93e17f975b7f14a6) 483

[SlideSyncInfoAtom12 type](#Section_54c75042f4af4a228d8d59df15f87557) 451

[SlideTime10Atom slide type](#Section_d5e12b9941514c289d8652328381c974) 179

[SlideViewInfoAtom view info type](#Section_bb7145715b154cd8a28c4437c4e1ad15) 133

[SlideViewInfoContainer view info type](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3) 132

[SlideViewInfoInstance view info type](#Section_b2b53b7fd4c145a9948e3e0e7d168164) 132

[SmallRectStruct structure](#Section_e47cb9738480499590b2008bcb2ffc65) 460

[SmartTagIndex basic type](#Section_9ab29cb27b03495b94b704cd42c076f4) 38

[SmartTags text type](#Section_30a82ae1f03e405790d5fe1c7e69b744) 367

[SmartTagStore11Container type](#Section_f6735fdfc53746fb82dfb509a9d80faa) 453

[SorterViewInfoContainer view info type](#Section_7184066996c54d7a9a9aeb5184c1626e) 135

[SoundBuiltinIdAtom sound type](#Section_430f8098998a4b9a8e9ef93b5d2dce08) 74

[SoundCollectionAtom sound type](#Section_e74f6ee22f184b8e8ba514594f5121ae) 70

[SoundCollectionContainer sound type](#Section_8b25294d1485419fa85f48580b8cfbef) 69

[SoundContainer sound type](#Section_8c5498fa18324659a02bd23e28ef21b3) 71

[SoundDataBlob type](#Section_e28036d86cea4142b823ed856b87eb52) 454

[SoundExtensionAtom sound type](#Section_9cd28f87c72244dcadc5ed72233e19cf) 72

[SoundIdAtom sound type](#Section_00d3b37fe99a43e0b5e8578c0c9a9a94) 73

[SoundIdRef basic type](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) 38

[SoundNameAtom sound type](#Section_f593b2eb8e414e02aed5143e2f109497) 72

[SpellingFlags text type](#Section_c878a17b61f745a893e2499c5f8034cb) 367

[storage structure](#section_40592fe5a973455088d904246bcc9ecd) 29

[StyleTextProp10Atom text type](#Section_663f260adf984185b4fdf092d3826548) 397

[StyleTextProp11 text type](#Section_4d3465183db8487fb2a8a1e41035f628) 398

[StyleTextProp11Atom text type](#Section_b0e6e86508654d1bb5d3a2a805725915) 397

[StyleTextProp9 text type](#Section_fb67da927dd849649e44b8b92291ee87) 396

[StyleTextProp9Atom text type](#Section_b046e29f7ff04ac69456b014d812748f) 395

[StyleTextPropAtom text type](#Section_a9a5fa71238d491eacc7fa1fffd5f100) 375

[SubEffectContainer animation type](#Section_8f1586ac86864bda9ba58cc43ba91642) 238

[summary information stream](#section_dfea964e936f42bb838c3fc19909cc32) 33

[SummaryContainer summary info type](#Section_446dee5f73d04ea3bc6d04afeadfd6e8) 137

[TabCrLfPrintableUnicodeString basic type](#Section_1a867a3571714f09b56760dea80412f2) 38

[TableDiffContainer document comparison type](#Section_a3e432fbcc1547eebb2fc7f5838118e9) 122

[TableListDiffContainer document comparison type](#Section_ca72b575025f4d6da4b6bcb00527b746) 121

[TabSize basic type](#Section_8b1533a8e2104bcebb11fdb1301a27bc) 38

[TabStop text type](#Section_2b8ecabd6a6f426c9eecc1623611a1e8) 359

[TabStops text type](#Section_89ee352d52194cf29a562a67fe85b201) 359

[TagNameAtom type](#Section_274ba042a7134d939542cc31967c0857) 455

[TagValueAtom type](#Section_11f5be351e644038bd7e6e6248f0b43f) 455

[TargetAtom external object type](#Section_6a84616800154544a3c345f56e9577d8) 418

[TemplateNameAtom slide type](#Section_cebe780b49ee491b81a10f90d3872e03) 169

[TextAlignmentEnum enumeration](#Section_5fe09a4e204e41dda1e683ea729e0f25) 483

[TextAutoNumberScheme text type](#Section_161f5b5d336545eb9b1c0bf8a7190287) 361

[TextAutoNumberSchemeEnum enumeration](#Section_45509009f8f14d81836a2de06839d4ac) 484

[TextBookmarkAtom text type](#Section_5eeac20cc3cc45a789185a96c9f394a1) 387

[TextBuildSubEffectEnum enumeration](#Section_42f272ca73634e5098aeaa66da123624) 485

[TextBytesAtom text type](#Section_80aae34b269943fa9e6ac560ae790cd7) 374

[TextCFException text type](#Section_c75024a214cb4d7d9964bdab2fcd9d93) 350

[TextCFException10 text type](#Section_77fea531e8394bc9b8137adc3f2adea0) 354

[TextCFException9 text type](#Section_589af75ae0c34592b1f29471a0fa24a3) 353

TextCFExceptionAtom text type ([section 2.9.13](#Section_1130b69a13264feda16556ef29921312) 349, [section 2.9.19](#Section_ec7fbd0dcb3347ad94dc41788732df14) 355)

[TextCFRun text type](#Section_426f313aa4f34ffba0419a74ccf23f17) 377

[TextCharsAtom text type](#Section_a3c5c8d5e5304167a2427743bc99aeac) 374

[TextClientDataSubContainerOrAtom text type](#Section_5e90593583704c55a3f9ddf0e143d276) 402

[TextDefaults10Atom text type](#Section_43975b61904e46c38d4bec08ed1fcb22) 401

[TextDefaults9Atom text type](#Section_ab49e0370973424eb155250559a98723) 400

[TextDiffContainer document comparison type](#Section_51f0806e0d314075b25784d19dbe6ca5) 118

[TextDirectionEnum enumeration](#Section_764983cc84564fcc9712e93cbf15acf9) 486

[TextFontAlignmentEnum enumeration](#Section_c642180e61ca4a05868731a0cf5a5495) 486

[TextHeaderAtom text type](#Section_08d31a6607504009b41649f2871cd178) 372

[TextInteractiveInfoInstance text type](#Section_824e7fc09f994135b1f30fbd5597f5fd) 389

[TextMasterStyle10Atom text type](#Section_72dd8636450c451fa60d9faddcff72be) 371

[TextMasterStyle10Levels text type](#Section_e32c88b5ce1a4a8282c13c740433a04a) 372

[TextMasterStyle9Atom text type](#Section_7e0b6a7e059145769dd02305bd8c0323) 369

[TextMasterStyle9Level text type](#Section_adfd57bc4c134f27854fce73ddbcd0c0) 370

[TextMasterStyleAtom text type](#Section_5febad270c484f98b655562b986f5874) 367

[TextMasterStyleLevel text type](#Section_b033d0f4aa9643dca333835849858f1f) 369

[TextPFException text type](#Section_c15a13b3db2c4b50a7e608045581a663) 355

[TextPFException9 text type](#Section_3e80f159dab6415da40918ea6975b0c9) 360

[TextPFRun text type](#Section_4e95a4f9a9af42b5b81af8f991cb1418) 376

[TextPosition basic type](#Section_7f3c80c201d94cb997f2adb082b01a35) 38

[TextRange text type](#Section_7bdc8284595a40c29a2f5245c1fda304) 390

[TextRuler text type](#Section_36b5f25afd5d4db18735dcb06a84fe30) 363

[TextRulerAtom text type](#Section_e8487b82d9664193a6752b39f4adf647) 362

[TextSIException text type](#Section_c4be3fe8ac2d42b485bb2647078f4c53) 365

[TextSIExceptionAtom text type](#Section_4713a7ea63624fd88231a32637a6c3d2) 365

[TextSIRun text type](#Section_bc49480fbe724f1ab8e1708ee109cb1f) 388

[TextSpecialInfoAtom text type](#Section_382afea69dc34b6c820611abef8b8366) 388

[TextTabTypeEnum enumeration](#Section_b4e867fbbd7a4f97a5c8127693a442dc) 486

[TextTypeEnum enumeration](#Section_50118cd348c243299a406a0281e960b6) 486

[TimeAnimateBehaviorAtom animation type](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe) 265

[TimeAnimateBehaviorContainer animation type](#Section_bc65cd1c14a74c0dbc2d192bab64a713) 263

[TimeAnimateBehaviorValueTypeEnum enumeration](#Section_2817d0100a0347dd82993610e25a4645) 487

[TimeAnimateColor animation type](#Section_543d75a1d95d45aa8736547b8b0c7e62) 289

[TimeAnimateColorBy animation type](#Section_e55e201bb36b47a89b054903cfcf2941) 287

[TimeAnimationValueAtom animation type](#Section_65496e4f4e9743beb68e4f1355f41aa3) 270

[TimeAnimationValueListContainer animation type](#Section_9177feba1a8140b8950dd1de63ae8ee7) 267

[TimeAnimationValueListEntry animation type](#Section_be583d6811d743c2a3008ef2ffac7841) 267

[TimeBehaviorAtom animation type](#Section_9f996c4a3780415c9a6771d323788f95) 272

[TimeBehaviorContainer animation type](#Section_8d75cc5b6f804b2e980ba521e2691e54) 271

[TimeColorBehaviorAtom animation type](#Section_82b99b3c9e2e43778bf326b0e69537a5) 286

[TimeColorBehaviorContainer animation type](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1) 285

[TimeColorBehaviorPropertyUsedFlag animation type](#Section_1949c9462a334a0b8f42d700a5ab7735) 287

[TimeColorDirection animation type](#Section_0299e331262745c59fe0541de33dcaa8) 277

[TimeColorModel animation type](#Section_3c4894dddd604fde8e92a0d9bcd730ff) 276

[TimeCommandBehaviorAtom animation type](#Section_19b49fc55a7f4022ba930df4d5269bb3) 330

[TimeCommandBehaviorContainer animation type](#Section_d188069b704c4f9d838898a7eb357f0f) 328

[TimeCommandBehaviorTypeEnum enumeration](#Section_c4bc4b37b85647f2a88f738f87f14b2d) 487

[TimeConditionAtom animation type](#Section_6d79388473f24b87b8b1a1b0e6310ad6) 335

[TimeConditionContainer animation type](#Section_3b2ae2ff52fc405b8c3afd0702f490d3) 334

[TimeDisplayType animation type](#Section_4ce3979934b1456a9a21dc5dda7c0d21) 243

[TimeEffectBehaviorAtom animation type](#Section_bf8ed545f2f548528ffb7b69c6ddc128) 295

[TimeEffectBehaviorContainer animation type](#Section_498a5d0f07254a06a7de7c67394e9146) 290

[TimeEffectID animation type](#Section_35c58b5655324d778c3353a82efb5a89) 246

[TimeEffectNodeType animation type](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) 262

[TimeEffectType animation type](#Section_989fce31f9b845a8a358361ca53d7a3d) 259

[TimeEventFilter animation type](#Section_a4433ce8d99e43a6999c1387161c610d) 261

[TimeGroupID animation type](#Section_da6bcd4790ea44a692a0aeca9c2864e4) 261

[TimeIterateDataAtom animation type](#Section_96e2df55a3be4175a8307dc3c3ae46ca) 330

[TimeMasterRelType animation type](#Section_a55a946ac8df4659a2934fe3370e4706) 244

[TimeModifierAtom animation type](#Section_bbfa8706196c4508934c8007a84773ea) 336

[TimeMotionBehaviorAtom animation type](#Section_0c7cb657218342c8ae2e887766db0815) 298

[TimeMotionBehaviorContainer animation type](#Section_40b9860a04a54946ae4b51fdd1176cec) 296

[TimeNodeAtom animation type](#Section_a6b40fd7decd4d6e991a10394458c6a8) 240

[TimeNodeTimeFilter animation type](#Section_41a5d8b9c0014fecaf559903e8a7a482) 260

[TimeNodeTypeEnum enumeration](#Section_8b2c01817e764bc79372285dcb67ae6f) 487

[TimeOverride animation type](#Section_20ce9a318eaa4a42b957b9111be76b2c) 277

[TimePointsTypes animation type](#Section_1656e976a2c14a19a9e9dccd516f24af) 279

[TimePropertyID4TimeBehavior enumeration](#Section_5cb9da332a5e4738bd1c717db16bbcc6) 488

[TimePropertyID4TimeNode enumeration](#Section_582b9812deec41e3a3674016878ca98c) 488

[TimePropertyList4TimeBehavior animation type](#Section_51c4cc592d584ac98b254abc1040780d) 274

[TimePropertyList4TimeNodeContainer animation type](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2) 241

[TimeRotationBehaviorAtom animation type](#Section_0fc7d6f315a0464b958c6bfdbf874050) 300

[TimeRotationBehaviorContainer animation type](#Section_2ef1f0c624534be7875ea1a7d7201580) 300

[TimeRuntimeContext animation type](#Section_4c48cb5aae834962a0ac994008e08193) 278

[TimeScaleBehaviorAtom animation type](#Section_4e1b5b50334d4aa5a00c4d95f087b148) 302

[TimeScaleBehaviorContainer animation type](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a) 302

[TimeSequenceDataAtom animation type](#Section_342b92a273df4b0b9878862f3532d570) 332

[TimeSetBehaviorAtom animation type](#Section_f8876381cf7f4d2b9888965e2929c9dc) 327

[TimeSetBehaviorContainer animation type](#Section_5428095fe4c443d0ad36b8b240e1338b) 304

[TimeStringListContainer animation type](#Section_99109d34b306454e8e19da1f090cedd9) 273

[TimeSubType animation type](#Section_ac877ddb3911491f8026d11051aa0b63) 245

[TimeVariant animation type](#Section_8080ab7d824644d882c5a20d1b92dc6c) 336

[TimeVariant4Behavior animation type](#Section_758f23158ef74f1d81da41ed4ab6683a) 275

[TimeVariant4TimeNode animation type](#Section_1cbe764818fe4205b2c738163c85daf7) 242

[TimeVariantBool animation type](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) 337

[TimeVariantFloat animation type](#Section_8b7a8b5faf3841f182e2690112fd633c) 338

[TimeVariantInt animation type](#Section_d9647022f6834f1a9267cc8519053318) 337

[TimeVariantString animation type](#Section_c53f2602385449249a6349400ec6255c) 339

[TimeVariantTypeEnum enumeration](#Section_9900a3e8334a470583969b25de7958bc) 489

[TimeVisualElementEnum enumeration](#Section_203c5f54666740468a63915100e25880) 489

[TmsfTimeStruct structure](#Section_013e697db1274c1db558c0aac04916d5) 461

[TriggerObjectEnum enumeration](#Section_bdd8b7511e27473f92d8e8947888274a) 489

[TxLCID basic type](#Section_118aee24b6cd415cbc7e756ea0dfcd2d) 39

[UncOrLocalPath basic type](#Section_dd863c41d58d487381f39a6cb84a718c) 39

[UncOrLocalPathAtom external object type](#Section_b376f887227b4f538600fa036403ce05) 409

[UncPath basic type](#Section_c6b4538aca1544e18f013311f5d28071) 39

[UncPathOrHttpUrl basic type](#Section_f3d6c1dc5dec437898017ff13a00f248) 39

[UnicodeString basic type](#Section_069fadd944684ce28f0e8b08d6e319ea) 39

[UnknownBinaryTag type](#Section_4f7ad45eb5844a93b481894f5c671160) 456

[UserDateAtom header/footer type](#Section_59b1690f1aea4b12846f3a1bec342425) 66

[UserEditAtom file structure](#Section_3ffb3fab95de487398aad508fbbac981) 42

[Utf8UnicodeString basic type](#Section_d28ec6ef8a0e4351b4b8ec5c70ccdd76) 39

[VBAInfoAtom document type](#Section_93d20ef2151443f9901c50c56d3a3073) 57

[VBAInfoContainer document type](#Section_ca0b2c2bb1f8429890bd45296415f0a6) 56

[VbaProjectStg external object type](#Section_6c391284f2e14b90a93f780e6a8519ff) 432

[VbaProjectStgCompressedAtom external object type](#Section_03882002995a42f4997ce9d1dce888b1) 433

[VbaProjectStgUncompressedAtom external object type](#Section_ca12ee80d3a6424f82ce56a927669fed) 432

[ViewTypeEnum enumeration](#Section_cba11b78dfcd451e81cdbf080175e314) 490

[VisualElementAtom animation type](#Section_7b47864505d44a2eb21ebbf183e3f73d) 281

[VisualPageAtom animation type](#Section_4ecd8e2993c14393a31c80a8ccd529ce) 281

[VisualShapeAtom animation type](#Section_a274411d0faa4993b202a7510a93c881) 283

[VisualShapeChartElementAtom animation type](#Section_660780f345414850bae696b8ffa7d645) 283

[VisualShapeGeneralAtom animation type](#Section_e3f4be5088fd43fdb68f82f2743e92ea) 284

[VisualShapeOrSoundAtom animation type](#Section_980f64aba892406bb4696299033ade3c) 282

[VisualSoundAtom animation type](#Section_8cf2f3366e294368b5f1a21e8779f3af) 282

[WebFrameColorsEnum enumeration](#Section_33f64cba48d14482a9fede9f32d0b8d6) 491

[WebOutputEnum enumeration](#Section_3b7b79c44daf45549c6fd1fdaf72c323) 491

[WideColorStruct structure](#Section_c03b38b48b9c4c5f914ce9819b228619) 458

[ZoomViewInfoAtom view info type](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) 128

[DetailspPictures stream](#section_150a72bc487f467e994e01270dfaf9bf) 33

[DiagramBuildAtom animation type](#Section_f23973b309df492e99149cd331f8a5bc) 233

[DiagramBuildContainer animation type](#Section_fb5d0358ee2644e8bf0e04d035401fd2) 233

[DiagramBuildEnum enumeration](#Section_65a3ad6bba9b4c92a82a7f8a62203273) 464

[DiffRecordHeaders document comparison type](#Section_8e2858264cf64479bc4dff5ac5aed8de) 104

[DiffTree10Container document comparison type](#Section_ea695ebc48d847e7a77e747ecd4e8d75) 102

[DiffTypeEnum enumeration](#Section_ef8a54b2da854dbab9a60131d8f579c7) 465

[Digital signature storage](#section_fce5c4a84fa244aeb41ef7f74dc93511) 33

[DocDiff10Container document comparison type](#Section_3c109426135949a0a42d2a79bf6f0d90) 105

[DocInfoListContainer document type](#Section_f0fed863362f43a0ae7872ae15e56171) 52

[DocInfoListSubContainerOrAtom document type](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3) 52

[DocProgBinaryTagContainer document tag info type](#Section_96d2ece1800548ebbbae0fd8f55f2f63) 142

[DocProgBinaryTagSubContainerOrAtom document tag info type](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d) 143

[DocProgTagsContainer document tag info type](#Section_6965e9a7d4314707b789081a6a9c7b8f) 141

[DocProgTagsSubContainerOrAtom document tag info type](#Section_0d1a5da5dcab4b3f8c97b79d74321e37) 142

[DocRoutingSlipAtom type](#Section_8dbe7f1cb2374383a9931a67e660faf0) 434

[DocRoutingSlipString type](#Section_36c239f5e4d84c66b35a75d1bfec5bac) 436

[DocToolbarStates10Atom document comparison type](#Section_e7b4619ec9ca40da99c76b9cdfe472d7) 99

Document comparison type

[DiffRecordHeaders](#Section_8e2858264cf64479bc4dff5ac5aed8de) 104

[DiffTree10Container](#Section_ea695ebc48d847e7a77e747ecd4e8d75) 102

[DocDiff10Container](#Section_3c109426135949a0a42d2a79bf6f0d90) 105

[DocToolbarStates10Atom](#Section_e7b4619ec9ca40da99c76b9cdfe472d7) 99

[ExternalObjectDiffContainer](#Section_abb251c1a17a419a8519e799dc1e4721) 120

[HeaderFooterDiffContainer](#Section_dc773f9fdf844d419f50b206d6662d50) 107

[InteractiveInfoDiffContainer](#Section_b3fac6098b6e4b67b7a200a41f8765d6) 121

[MainMasterDiffContainer](#Section_d9a1101e91ae43d7a5f9627c3e05f91a) 111

[MasterListDiff10ChildContainer](#Section_b239ca536d684666a39450132c45aa7f) 111

[MasterListDiffContainer](#Section_e4bc97ae22de423f8e2f333018ed65c0) 110

[NamedShowDiffContainer](#Section_51d270c9772b4d1d865e585cd0b5d86c) 108

[NamedShowListDiffContainer](#Section_fff0a29d98ff478cb460e2fbe000ab7e) 107

[NotesDiffContainer](#Section_2414449c9ca34ad29aabe195e96ce4df) 124

[RecolorInfoDiffContainer](#Section_f3301c55be65413c824042f97e72ae65) 119

[ReviewerNameAtom](#Section_5aa53fdfa0794ce2a27fa1af7106a427) 103

[ShapeDiffContainer](#Section_c1ec712373fc4f01a3085935234abe33) 115

[ShapeListDiffContainer](#Section_21ff0b659bae474294bf5e4af99a6b1b) 115

[SlideDiffContainer](#Section_899d425cba9b4a3eb5ab64f65b2897f3) 112

[SlideListDiffContainer](#Section_1d3c490c38884f5d91e4cc059baf4a65) 109

[SlideListEntry10Atom](#Section_29e7a9d4974845d6abaa921772ca43a3) 101

[SlideListTable10Container](#Section_42463f5b55c7457598467f4b412228aa) 100

[SlideListTableSize10Atom](#Section_e0b1efea693c480fa45b857c54124a2a) 101

[SlideShowDiffContainer](#Section_68fde33d71a0419380509f0dbd2301de) 123

[TableDiffContainer](#Section_a3e432fbcc1547eebb2fc7f5838118e9) 122

[TableListDiffContainer](#Section_ca72b575025f4d6da4b6bcb00527b746) 121

[TextDiffContainer](#Section_51f0806e0d314075b25784d19dbe6ca5) 118

[Document programmable tag example](#section_a0d30ef4e45f45158a66b1368a3eee13) 538

[Document summary information stream](#section_abdf642437c44ac0b4cc8cb5aed11497) 33

Document tag info type

[DocProgBinaryTagContainer](#Section_96d2ece1800548ebbbae0fd8f55f2f63) 142

[DocProgBinaryTagSubContainerOrAtom](#Section_c6f4b641dd23413c8c4d3069d0ac5b6d) 143

[DocProgTagsContainer](#Section_6965e9a7d4314707b789081a6a9c7b8f) 141

[DocProgTagsSubContainerOrAtom](#Section_0d1a5da5dcab4b3f8c97b79d74321e37) 142

[PP10DocBinaryTagExtension](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed) 146

[PP11DocBinaryTagExtension](#Section_662c3a59f11d4d3fb472c695b4e598a8) 149

[PP12DocBinaryTagExtension](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7) 150

[PP9DocBinaryTagExtension](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0) 143

Document type

[AtomContainer](#Section_121f272834974a0a829e6f416fee2ee6) 49

[DocInfoListContainer](#Section_f0fed863362f43a0ae7872ae15e56171) 52

[DocInfoListSubContainerOrAtom](#Section_24b7c2f9fcd74c8d899f32c381ba7fa3) 52

[DocumentContainer](#Section_6254c4d152174e16b20dc04ddcce31c9) 46

[DrawingGroupContainer](#Section_1daf91b135314e55ba6a2e271de975c0) 51

[EndDocumentAtom](#Section_ac2a2b3b4ccc4f3ab17252dd742b5475) 58

[FilterPrivacyFlags10Atom](#Section_016a804e325546a7a353707c8232e542) 55

[ModifyPasswordAtom](#Section_6d703306994647f4b206794ddb90585f) 54

[PhotoAlbumInfo10Atom](#Section_2782f287ec64433182bc63fb6eb8c98e) 55

[PresAdvisorFlags9Atom](#Section_866dc2301b1947bca5a41160b18e846e) 53

[PrintOptionsAtom](#Section_38013adecfee4bbda443d84822a80173) 58

[VBAInfoAtom](#Section_93d20ef2151443f9901c50c56d3a3073) 57

[VBAInfoContainer](#Section_ca0b2c2bb1f8429890bd45296415f0a6) 56

[DocumentAtom document type](#Section_121f272834974a0a829e6f416fee2ee6) 49

[DocumentContainer document type](#Section_6254c4d152174e16b20dc04ddcce31c9) 46

[DocumentTextInfoContainer text type](#Section_6a08728e04f84cc1831773cefa178870) 339

[DrawingContainer slide type](#Section_0595b49fda964402b3531f766e9d548f) 166

[DrawingGroupContainer document type](#Section_1daf91b135314e55ba6a2e271de975c0) 51

E

[ElementTypeEnum enumeration](#Section_9d254b2a9ff04b99b03626152848bf69) 466

[Encrypted summary information stream](#section_8faaf589abed4d79a758529ce59dfcfd) 33

[EndDocumentAtom document type](#Section_ac2a2b3b4ccc4f3ab17252dd742b5475) 58

Enumeration

[AnimAfterEffectEnum](#Section_4d043d499e804992884f02375f6bdcd3) 461

[AnimBuildTypeEnum](#Section_ebc572643737436da80ec774afae16e8) 461

[BuildTypeEnum](#Section_c197f4ecca244672933455a17509fef6) 463

[ChartBuildEnum](#Section_5f2588d86ede457eb059b27561da0ab4) 463

[ColorModeEnum](#Section_47630627706e4e86a0ba45ea90837cec) 464

[ConditionEnum](#Section_a6a1754c4001423a8d0ee62630705624) 464

[DiagramBuildEnum](#Section_65a3ad6bba9b4c92a82a7f8a62203273) 464

[DiffTypeEnum](#Section_ef8a54b2da854dbab9a60131d8f579c7) 465

[ElementTypeEnum](#Section_9d254b2a9ff04b99b03626152848bf69) 466

[ExColorFollowEnum](#Section_ebecbab3a3e34877a3bffabc10d90432) 466

[ExOleObjSubTypeEnum](#Section_9851ea47c044476a93026904de72d279) 467

[ExOleObjTypeEnum](#Section_e71fc7fb94a64feab7e657ddf07800bd) 467

[InteractiveInfoActionEnum](#Section_61cd7fe2e7d440929d4c3c5b720e8330) 468

[InteractiveInfoJumpEnum](#Section_9466e4a7a80d42d4b6844f31463142b1) 468

[LinkToEnum](#Section_2f58ed281a7f43ceade7c2b04c74e522) 468

[NormalViewSetBarStates](#Section_9ead9648630049599db0bc8b74770e6c) 469

[OLEVerbEnum](#Section_d3f3afeef16e41e7b03832a789f2e85b) 469

[ParaBuildEnum](#Section_54aa20499fb84e5293fbad4c95bc5f29) 469

[PhotoAlbumFrameShapeEnum](#Section_3a61325ee32e4ccd88c8c0ab2e4cd410) 470

[PhotoAlbumLayoutEnum](#Section_78ebf4895eca4b088feb7c63f69817eb) 470

[PlaceholderEnum](#Section_dbfd04be077644d9b408b07f4c951eaf) 471

[PlaceholderSize](#Section_557f629693464db5bdc05acbc5a33617) 472

[PrintWhatEnum](#Section_3782bb37ad904ef3aa4bb78ebf578e94) 472

[RecordType](#Section_38fb1fa50a62477a8b14178df22de812) 473

[SlideLayoutType](#Section_df8f3d7bdb6747dc8c8920f5cbbf0fa9) 482

SlideSizeEnum ([section 2.13.26](#Section_2e9fc1fd73db465f93e17f975b7f14a6) 483, [section 2.13.27](#Section_5fe09a4e204e41dda1e683ea729e0f25) 483)

[TextAutoNumberSchemeEnum](#Section_45509009f8f14d81836a2de06839d4ac) 484

[TextBuildSubEffectEnum](#Section_42f272ca73634e5098aeaa66da123624) 485

[TextDirectionEnum](#Section_764983cc84564fcc9712e93cbf15acf9) 486

[TextFontAlignmentEnum](#Section_c642180e61ca4a05868731a0cf5a5495) 486

[TextTabTypeEnum](#Section_b4e867fbbd7a4f97a5c8127693a442dc) 486

[TextTypeEnum](#Section_50118cd348c243299a406a0281e960b6) 486

[TimeAnimateBehaviorValueTypeEnum](#Section_2817d0100a0347dd82993610e25a4645) 487

[TimeCommandBehaviorTypeEnum](#Section_c4bc4b37b85647f2a88f738f87f14b2d) 487

[TimeNodeTypeEnum](#Section_8b2c01817e764bc79372285dcb67ae6f) 487

TimePropertyID4TimeBehavior ([section 2.13.37](#Section_5cb9da332a5e4738bd1c717db16bbcc6) 488, [section 2.13.38](#Section_582b9812deec41e3a3674016878ca98c) 488)

[TimeVariantTypeEnum](#Section_9900a3e8334a470583969b25de7958bc) 489

[TimeVisualElementEnum](#Section_203c5f54666740468a63915100e25880) 489

[TriggerObjectEnum](#Section_bdd8b7511e27473f92d8e8947888274a) 489

[ViewTypeEnum](#Section_cba11b78dfcd451e81cdbf080175e314) 490

[WebFrameColorsEnum](#Section_33f64cba48d14482a9fede9f32d0b8d6) 491

[WebOutputEnum](#Section_3b7b79c44daf45549c6fd1fdaf72c323) 491

[EnvelopeData9Atom type](#Section_a156cedf061d45678f2b0fa9cb08a7ee) 437

[EnvelopeFlags9Atom type](#Section_692189fb057b48e6b195a7689e8e3c0f) 437

Examples

[Animation](#section_9aadd4e5a29b4d17934ea8eb42d5512d) 542

[character formatting](#section_d88c020e67024be69f54220106a971d6) 612

[document programmable tag](#section_a0d30ef4e45f45158a66b1368a3eee13) 538

[external video](#section_85caeb62039842849276eeb6055e7263) 604

[File Structure](#section_5bda800966124679a6eb6fb83cbcf195) 503

[Introduction](#section_510796aadbab4fcba535b08c754c1ca6) 492

[master slide](#section_8c1f895903c846f09f811ef072f958aa) 518

[metacharacter formatting](#section_ac86fb5460cd476282aa5710e3bbef9b) 622

[notes slide](#section_0d430f9017fc473092c990198d19c13b) 531

[OLE object](#section_ff524da91f4d4df591e87a734530ad11) 600

[Outline Text](#section_0d75c31791f747958e6941dde73f9690) 511

[overview](#section_510796aadbab4fcba535b08c754c1ca6) 492

[paragraph formatting](#section_a46a5d5c243e4e6fa85d4e4feb6f7e3c) 606

[Persist Objects](#section_7bd57959d49c48a1940abde37ec93c6f) 509

[presentation slide](#section_cb3376a86bd64c62b579081eef2195b5) 520

[Programmable Tags](#section_823a8ce25c954365a90d5f82d735df95) 538

[shape anchor](#section_d959807b3d3041dda5c4c914f4f5098c) 595

[shape animation](#section_13b03cf8e1934d7cbeceefee91ea40bd) 556

[Shape Client Data](#section_aa668d0aa42b47b68113c6bcfaf33d1e) 595

[shape placeholder](#section_5be6d1ccca1e404e98df9560291f833b) 597

[shape text](#section_f43c091d80bc4ba8b920bec7e17ec9cb) 598

[slide programmable tag](#section_669d0590c88242638aa15a9fb88fa053) 541

[Slides](#section_abdcb7cd4cc142fea805ed89403b4fae) 518

[Text](#section_0671ec5911024c8fb2fbec549db17d8b) 606

[text animation](#section_d8b47ac92a8e4c8b88b49f58d893bdad) 542

[TextInteractiveInfo](#section_a5b024ec31a644f8be516a3b6d2f1cb0) 619

[ExAviMovieContainer external object type](#Section_b434673370da4a3098d7b2e026d0d7cb) 407

[ExCDAudioAtom external object type](#Section_4dfd1e1980134040848ea7ecdfa6bd00) 410

[ExCDAudioContainer external object type](#Section_fbe8267c2370443c9d6499b24d4248e9) 409

[ExColorFollowEnum enumeration](#Section_ebecbab3a3e34877a3bffabc10d90432) 466

[ExControlAtom external object type](#Section_0a31df487ebb461a967e42003b8e91bd) 412

[ExControlContainer external object type](#Section_4a873d5bdd274b29bdaa705bb2ef3d92) 411

[ExControlStg external object type](#Section_dc8d8818de0e463e9f26a9bad364245d) 431

[ExControlStgCompressedAtom external object type](#Section_ed65e33859ad4e85ba8abad23a877120) 432

[ExControlStgUncompressedAtom external object type](#Section_5ce0969f14574174b6cf845915d4f564) 431

[ExHyperlink9Container external object type](#Section_c021ee00af9c4673bd69e3d49f3668df) 419

[ExHyperlinkAtom external object type](#Section_c760a33c472f449cb1db5dc5fe59ace1) 416

[ExHyperlinkContainer external object type](#Section_3145d686e4e34eb2849f03c4cf410d42) 415

[ExHyperlinkFlagsAtom external object type](#Section_55f45d4439fd404095061f14878ce2ac) 421

[ExHyperlinkId basic type](#Section_42b7d88ae81644a385baad5586c7470e) 34

[ExHyperlinkIdRef basic type](#Section_c2068363765343ecb8bb746532d66c6e) 35

[ExHyperlinkRefAtom external object type](#Section_37fa88095b274f9e95a669b633d191ea) 420

[ExMCIMovieContainer external object type](#Section_e6094ce87fb74c91aa111a02f1ee03d8) 421

[ExMediaAtom external object type](#Section_3239ce9f932f4e4f8299333e907a6ccc) 408

[ExMIDIAudioContainer external object type](#Section_43c4d032436f4108a9ae4ea1d339db8b) 422

[ExObjId basic type](#Section_de24f7263ecb492d901b568a57c02eb4) 35

[ExObjIdRef basic type](#Section_019cfee017eb4946ac81d88c6d170c0b) 35

[ExObjListAtom external object type](#Section_ebd9be5b3df44c2c99ba84923f01a322) 406

[ExObjListContainer external object type](#Section_3b997d4d79514478acc51c9adbc2627a) 405

[ExObjListSubContainer external object type](#Section_bc182153f27a4f5fb7e41ae1270ede28) 406

[ExObjRefAtom shape type](#Section_d6e17fee7d53453f962bb671a4f8869f) 202

[ExOleEmbedAtom external object type](#Section_003441ca0e10403b92c3ebcd7fcc6a07) 424

[ExOleEmbedContainer external object type](#Section_c687090ca3594ffc918e415117e10229) 423

[ExOleLinkAtom external object type](#Section_d14ae8e499c34847941c7d7c258f7691) 426

[ExOleLinkContainer external object type](#Section_5311e92722f04e559f439142998efbd1) 425

[ExOleObjAtom external object type](#Section_a35170168e3245859a42adae02eea798) 413

[ExOleObjStg external object type](#Section_21e29c16df3a435280172c48864d2548) 429

[ExOleObjStgCompressedAtom external object type](#Section_305e541f2c9149c5a7424955330fd2b9) 430

[ExOleObjStgUncompressedAtom external object type](#Section_23491dfff2694a5285129d7244d43cc8) 429

[ExOleObjSubTypeEnum enumeration](#Section_9851ea47c044476a93026904de72d279) 467

[ExOleObjTypeEnum enumeration](#Section_e71fc7fb94a64feab7e657ddf07800bd) 467

External object type

[BinaryTagDataBlob type](#Section_5eba9e3ad09a4d058e5bf148f44021a4) 456

[ClipboardNameAtom](#Section_203232fa72dd465b81cd48cda50d3865) 415

[DocRoutingSlipAtom type](#Section_8dbe7f1cb2374383a9931a67e660faf0) 434

[DocRoutingSlipString type](#Section_36c239f5e4d84c66b35a75d1bfec5bac) 436

[EnvelopeData9Atom type](#Section_a156cedf061d45678f2b0fa9cb08a7ee) 437

[EnvelopeFlags9Atom type](#Section_692189fb057b48e6b195a7689e8e3c0f) 437

[ExAviMovieContainer](#Section_b434673370da4a3098d7b2e026d0d7cb) 407

[ExCDAudioAtom](#Section_4dfd1e1980134040848ea7ecdfa6bd00) 410

[ExCDAudioContainer](#Section_fbe8267c2370443c9d6499b24d4248e9) 409

[ExControlAtom](#Section_0a31df487ebb461a967e42003b8e91bd) 412

[ExControlContainer](#Section_4a873d5bdd274b29bdaa705bb2ef3d92) 411

[ExControlStg](#Section_dc8d8818de0e463e9f26a9bad364245d) 431

[ExControlStgCompressedAtom](#Section_ed65e33859ad4e85ba8abad23a877120) 432

[ExControlStgUncompressedAtom](#Section_5ce0969f14574174b6cf845915d4f564) 431

[ExHyperlink9Container](#Section_c021ee00af9c4673bd69e3d49f3668df) 419

[ExHyperlinkAtom](#Section_c760a33c472f449cb1db5dc5fe59ace1) 416

[ExHyperlinkContainer](#Section_3145d686e4e34eb2849f03c4cf410d42) 415

[ExHyperlinkFlagsAtom](#Section_55f45d4439fd404095061f14878ce2ac) 421

[ExHyperlinkRefAtom](#Section_37fa88095b274f9e95a669b633d191ea) 420

[ExMCIMovieContainer](#Section_e6094ce87fb74c91aa111a02f1ee03d8) 421

[ExMediaAtom](#Section_3239ce9f932f4e4f8299333e907a6ccc) 408

[ExMIDIAudioContainer](#Section_43c4d032436f4108a9ae4ea1d339db8b) 422

[ExObjListAtom](#Section_ebd9be5b3df44c2c99ba84923f01a322) 406

[ExObjListContainer](#Section_3b997d4d79514478acc51c9adbc2627a) 405

[ExObjListSubContainer](#Section_bc182153f27a4f5fb7e41ae1270ede28) 406

[ExOleEmbedAtom](#Section_003441ca0e10403b92c3ebcd7fcc6a07) 424

[ExOleEmbedContainer](#Section_c687090ca3594ffc918e415117e10229) 423

[ExOleLinkAtom](#Section_d14ae8e499c34847941c7d7c258f7691) 426

[ExOleLinkContainer](#Section_5311e92722f04e559f439142998efbd1) 425

[ExOleObjAtom](#Section_a35170168e3245859a42adae02eea798) 413

[ExOleObjStg](#Section_21e29c16df3a435280172c48864d2548) 429

[ExOleObjStgCompressedAtom](#Section_305e541f2c9149c5a7424955330fd2b9) 430

[ExOleObjStgUncompressedAtom](#Section_23491dfff2694a5285129d7244d43cc8) 429

[ExVideoContainer](#Section_342b66efd81d45c0aad3414545cb7ae4) 407

[ExWAVAudioEmbeddedAtom](#Section_abc3f20816ed4945a8443eec428cc780) 428

[ExWAVAudioEmbeddedContainer](#Section_2b70ee326217416b8841540f51f8e3af) 427

[ExWAVAudioLinkContainer](#Section_e16f324952764f8fa4b4483f6aa08cf1) 428

[FontEmbedDataBlob type](#Section_09f6010a4a6d4ba7a05a1acab10322fd) 438

[FriendlyNameAtom](#Section_e8e62224b3be43b9b97a658257d6af67) 417

[LocationAtom](#Section_6c05ffebaacd422bb931ec7b3e8b1ee3) 418

[MenuNameAtom](#Section_39e69a141c4649deaab4ac78485c6de1) 414

[MetafileBlob type](#Section_743b32d37f84418091275d744ffb706b) 439

[ProgIDAtom](#Section_4bfdd228254e40aba4970e0407079fd0) 414

[ProgStringTagContainer type](#Section_4c2f2168082c433d8356471fa54af929) 454

[RoundTripAnimationAtom type](#Section_6360395dcf04485a920324d5ae5591ec) 439

[RoundTripAnimationHashAtom type](#Section_c10e75d664d04e53aa84a06134026ed4) 440

[RoundTripColorMappingAtom type](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) 441

[RoundTripCompositeMasterId12Atom type](#Section_ae0701f92b464b6c90a049e7cfb20a7e) 441

[RoundTripContentMasterId12Atom type](#Section_e9a4f7c3f3ac4ba2b94c59a93f77d11b) 442

[RoundTripContentMasterInfo12Atom type](#Section_15e1aa8993ac4f248e0e398ecec7897b) 443

[RoundTripCustomTableStyles12Atom type](#Section_fdb1834fa6d8409f83422152025ae8eb) 443

[RoundTripDocFlags12Atom type](#Section_97f683aea7b2430cb4e49b1cc518f35d) 444

[RoundTripHeaderFooterDefaults12Atom type](#Section_016741fdd7aa4958b577c81fe19c179b) 444

[RoundTripHFPlaceholder12Atom type](#Section_ec3baf39684b49d38850d5798f0a1915) 445

[RoundTripNewPlaceholderId12Atom type](#Section_c13cfcfdd6964aecb1f2eafb3bd3977b) 446

[RoundTripNotesMasterTextStyles12Atom type](#Section_50f47937dbe0403eb93ed170d9b6ea0d) 446

[RoundTripOArtTextStyles12Atom type](#Section_92f10e186be94cc19e22fb24856f80d7) 447

[RoundTripOriginalMainMasterId12Atom type](#Section_4ffb4a9b891a41e689cdfd4312d08c90) 447

[RoundTripShapeCheckSumForCustomLayouts12Atom type](#Section_45644f02790a4d0c998e59ab5500c909) 448

[RoundTripShapeId12Atom type](#Section_a3e1963983784a1582db7453be42ddbe) 449

[RoundTripSlideSyncInfo12Container type](#Section_7ab552d5545048f6816b8cbc266d7803) 449

[RoundTripThemeAtom type](#Section_a50e597e248a41c8a1c370fd0988d609) 452

[ScreenTipAtom](#Section_d2e1c18127b841e088ef702c287fda1b) 420

[ServerIdAtom type](#Section_b008a1461e9e4e4aa0a39a6dd55bbf8a) 450

[SlideLibUrlAtom type](#Section_4f0d845d959e4deea2d7a4701a51a0b9) 451

[SlideSyncInfoAtom12 type](#Section_54c75042f4af4a228d8d59df15f87557) 451

[SmartTagStore11Container type](#Section_f6735fdfc53746fb82dfb509a9d80faa) 453

[SoundDataBlob type](#Section_e28036d86cea4142b823ed856b87eb52) 454

[TagNameAtom type](#Section_274ba042a7134d939542cc31967c0857) 455

[TagValueAtom type](#Section_11f5be351e644038bd7e6e6248f0b43f) 455

[TargetAtom](#Section_6a84616800154544a3c345f56e9577d8) 418

[UncOrLocalPathAtom](#Section_b376f887227b4f538600fa036403ce05) 409

[UnknownBinaryTag type](#Section_4f7ad45eb5844a93b481894f5c671160) 456

[VbaProjectStg](#Section_6c391284f2e14b90a93f780e6a8519ff) 432

[VbaProjectStgCompressedAtom](#Section_03882002995a42f4997ce9d1dce888b1) 433

[VbaProjectStgUncompressedAtom](#Section_ca12ee80d3a6424f82ce56a927669fed) 432

[External objects overview](#section_330c267279fe468b965e52519e4895dc) 23

[External video example](#section_85caeb62039842849276eeb6055e7263) 604

[ExternalObjectDiffContainer document comparison type](#Section_abb251c1a17a419a8519e799dc1e4721) 120

[ExtTimeNodeContainer animation type](#Section_83d39c580d3046a4bffb188d792cb5a7) 234

[ExVideoContainer external object type](#Section_342b66efd81d45c0aad3414545cb7ae4) 407

[ExWAVAudioEmbeddedAtom external object type](#Section_abc3f20816ed4945a8443eec428cc780) 428

[ExWAVAudioEmbeddedContainer external object type](#Section_2b70ee326217416b8841540f51f8e3af) 427

[ExWAVAudioLinkContainer external object type](#Section_e16f324952764f8fa4b4483f6aa08cf1) 428

F

[Fields - vendor-extensible](#section_1ef456b0e553440eb5d700f8b41662d8) 28

File storage

[custom XML data](#section_ec770c0133214044a3bf059525a90d8a) 33

[digital signature](#section_fce5c4a84fa244aeb41ef7f74dc93511) 33

File stream

[document summary information](#section_abdf642437c44ac0b4cc8cb5aed11497) 33

[encrypted summary information](#section_8faaf589abed4d79a758529ce59dfcfd) 33

[signatures](#section_4a3db6efa3ae495aa733fedc92660a00) 34

[summary information](#section_dfea964e936f42bb838c3fc19909cc32) 33

[file stream structure](#section_40592fe5a973455088d904246bcc9ecd) 29

[File streams](#section_40592fe5a973455088d904246bcc9ecd) 29

[current user](#section_76cfa65707a6464b81ab4c017c611f64) 29

[pictures](#section_150a72bc487f467e994e01270dfaf9bf) 33

[PowerPoint document](#section_1fc22d5628f94818bd4567c2bf721ccf) 29

[File Structure example](#section_5bda800966124679a6eb6fb83cbcf195) 503

File structure type

[CryptSession10Container](#Section_b096333444084621879aef9c54551fd8) 45

[CurrentUserAtom](#Section_940d5700e4d74fc0ab48fed5dbc48bc1) 40

[PersistDirectoryAtom](#Section_d10a093d860f409cb065aeb24b830505) 43

[PersistDirectoryEntry](#Section_6214b5a67ca24a868a0e5fd3d3eff1c9) 44

[PersistOffsetEntry](#Section_a056484a21324e1eaa546e387f9695cf) 44

[RecordHeader](#Section_df2011940cd04dfbbf10eea353d8eabc) 40

[UserEditAtom](#Section_3ffb3fab95de487398aad508fbbac981) 42

[FileNameAtom publish type](#Section_2b13333268de4f7ab42d96bc0f130818) 95

[FileOrDirNameFragment basic type](#Section_8870f902a03744bebb4ca91dfb82f2e4) 35

[FilterPrivacyFlags10Atom document type](#Section_016a804e325546a7a353707c8232e542) 55

[FontCollection10Container text type](#Section_8c62fed6394f4c49ae8aa73c2a8026d1) 348

[FontCollectionContainer text type](#Section_88da04bf68384f879a87adf067543837) 346

[FontCollectionEntry text type](#Section_fb4d26df15c74f978d8f6c73ea98e91d) 346

[FontEmbedDataBlob type](#Section_09f6010a4a6d4ba7a05a1acab10322fd) 438

[FontEmbedFlags10Atom text type](#Section_ec7445456e724d648280d96ac7b28a04) 349

[FontEntityAtom text type](#Section_b5946b702fbc4f7ba119b31fcbeb1794) 347

[FontIndexRef basic type](#Section_75b7196f2d274aefb8415695fe584140) 35

[FontIndexRef10 basic type](#Section_7c6b57e1753c43faa37155540f554a60) 35

[FooterAtom header/footer type](#Section_be36887533e9490db832954eb800a240) 68

[FooterMCAtom text type](#Section_5a2fa1e2bc5f450b89d0b372a811313a) 378

[FriendlyNameAtom external object type](#Section_e8e62224b3be43b9b97a658257d6af67) 417

G

[GenericDateMCAtom text type](#Section_a212a37760444ec2a5948c59be237125) 386

[Glossary](#section_ef463dad817f47909a5019783cd08827) 16

[GridSpacing10Atom view info type](#Section_e40174dc118f46c38c6198f63d426f44) 125

[GuideAtom view info type](#Section_b5cc09d93f104eabb204ba88552dc1ec) 133

H

[HandoutContainer slide type](#Section_bf6d1f839023412089c3fb69e49d0212) 158

[HandoutRoundTripAtom slide type](#Section_245d3c1ee2b84468bea0464be6251e09) 159

[HashCode10Atom animation type](#Section_bd2afac84f484071ba1a346546e1bee7) 224

Header/footer type

[FooterAtom](#Section_be36887533e9490db832954eb800a240) 68

[HeaderAtom](#Section_bdda477db94d4a4ebe1c35f78f68821c) 67

[HeadersFootersAtom](#Section_5ba5b716138d46439dbdfa1382d25082) 66

[NotesHeadersFootersContainer](#Section_58fe42d1259e4f809a342567c565125e) 68

[SlideHeadersFootersContainer](#Section_c1ff52ebb70a4de3a03385eefc7a25a8) 65

[UserDateAtom](#Section_59b1690f1aea4b12846f3a1bec342425) 66

[HeaderAtom header/footer type](#Section_bdda477db94d4a4ebe1c35f78f68821c) 67

[HeaderFooterDiffContainer document comparison type](#Section_dc773f9fdf844d419f50b206d6662d50) 107

[HeaderMCAtom text type](#Section_d7ed28bf83ef45e5a57b2384f8b03423) 378

[HeadersFootersAtom header/footer type](#Section_5ba5b716138d46439dbdfa1382d25082) 66

[HSLColorBy animation type](#Section_30ad7500612f41628e7e55d0e38e43aa) 288

[HTMLDocInfo9Atom publish type](#Section_9f9b9371093248ffa775cac417c466ef) 93

[HTMLPublishInfo9Container publish type](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29) 94

[HTMLPublishInfoAtom publish type](#Section_4296eeb2c07643a29a23bf645a2054c6) 96

[HttpUrl basic type](#Section_5984700489424f88a929fcfd49289bd3) 35

I

[Implementer - security considerations](#section_4c5b69e3f597486cac7080e7f97427ba) 626

[IndentLevel basic type](#Section_a6729542681c455bbdfdff5dec372e8c) 35

[IndexSchemeColor animation type](#Section_62ae89441ac84b6aaa5e0b1ea5583ace) 290

[Informative references](#section_eb4276c4b9504898957a2239adc0c6b0) 22

[InteractiveInfoActionEnum enumeration](#Section_61cd7fe2e7d440929d4c3c5b720e8330) 468

[InteractiveInfoAtom slide show type](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7) 196

[InteractiveInfoDiffContainer document comparison type](#Section_b3fac6098b6e4b67b7a200a41f8765d6) 121

[InteractiveInfoInstance slide show type](#Section_9225f32d5eb146b38ebd442bffded30d) 195

[InteractiveInfoJumpEnum enumeration](#Section_9466e4a7a80d42d4b6844f31463142b1) 468

[Introduction](#section_546cbcd8473c4425be4eebbf7d4d7430) 16

[Introduction example](#section_510796aadbab4fcba535b08c754c1ca6) 492

K

[KeywordsAtom summary info type](#Section_a549e2ed7f644b4a927ea22e76ffd213) 136

[Kinsoku9Atom text type](#Section_1ad9ce1b530247c18706c137a541efe9) 344

[Kinsoku9Container text type](#Section_78abb8b8747b428ebfbac8f8ca6c6b38) 343

[KinsokuAtom text type](#Section_f4aeb62ddb3148ed9ab76369697a62b7) 342

[KinsokuContainer text type](#Section_d22fdfcfb0334a9ab4beabc379ad0039) 341

[KinsokuFollowingAtom text type](#Section_009ecdc1817c4fb0a286eebd73f8fd06) 343

[KinsokuLeadingAtom text type](#Section_2a0209cc48b34505a201853c17e88d65) 342

L

[LevelInfoAtom animation type](#Section_ada7819fc1d54331b64caba3db29ce4d) 230

[LinkedShape10Atom slide type](#Section_4ad01f52581d4163b6cebd48fdeba54f) 182

[LinkedSlide10Atom slide type](#Section_2a277bb42dbe493494c1004b7122ce4d) 180

[LinkToEnum enumeration](#Section_2f58ed281a7f43ceade7c2b04c74e522) 468

[Localization](#section_c5d23a1cc621410ca0dd9933924f91ee) 28

[LocationAtom external object type](#Section_6c05ffebaacd422bb931ec7b3e8b1ee3) 418

M

[MachineName basic type](#Section_732274e8110340bfa451b1af4e703922) 36

[MacroNameAtom slide show type](#Section_7f850503c5444c8798172f1368632b70) 197

[MainMasterContainer slide type](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8) 153

[MainMasterDiffContainer document comparison type](#Section_d9a1101e91ae43d7a5f9627c3e05f91a) 111

[MarginOrIndent basic type](#Section_ab67e36095f442289b23fea825377c95) 36

[Master slide example](#section_8c1f895903c846f09f811ef072f958aa) 518

[MasterId basic type](#Section_fa12046c7ff945418f763ed799dcffc4) 36

[MasterIdRef basic type](#Section_ac1a16ba424a4f51b11d2914281bdfa5) 36

[MasterListDiff10ChildContainer document comparison type](#Section_b239ca536d684666a39450132c45aa7f) 111

[MasterListDiffContainer document comparison type](#Section_e4bc97ae22de423f8e2f333018ed65c0) 110

[MasterListWithTextContainer slide list type](#Section_18a9bc043307440ebbc2efcb75ee923d) 59

[MasterOrSlideContainer slide type](#Section_018cc2701573402aa3e8d83e8dc96813) 156

[MasterPersistAtom slide list type](#Section_ffcca362b8604a3d900e5c03f02c1775) 60

[MasterTextPropAtom text type](#Section_c80e1825db844e21a3d717068b1248c2) 404

[MasterTextPropRun text type](#Section_1454a4e7ef70445588261652b46394dd) 404

[MenuNameAtom external object type](#Section_39e69a141c4649deaab4ac78485c6de1) 414

[Metacharacter example](#section_ac86fb5460cd476282aa5710e3bbef9b) 622

[MetafileBlob type](#Section_743b32d37f84418091275d744ffb706b) 439

[ModifyPasswordAtom document type](#Section_6d703306994647f4b206794ddb90585f) 54

[MouseClickInteractiveInfoContainer slide show type](#Section_cc0910dd1aae4da9afa958a386333bcb) 195

[MouseClickTextInteractiveInfoAtom text type](#Section_1efdc2bfa11d40928128147b3602be87) 389

[MouseOverInteractiveInfoContainer slide show type](#Section_8714c89a4bb34fa581650742725cf755) 196

[MouseOverTextInteractiveInfoAtom text type](#Section_93a2cd280426415da67fec6f3f781a09) 390

N

[Named show](#section_16da3b4e8114473ebf6c0837daf9f370) 26

[NamedShowAtom publish type](#Section_5962eaa99cc04996b9020b4477790727) 96

[NamedShowContainer slide show type](#Section_a397a8a306f54fe780ea10ead0e1aeb0) 186

[NamedShowDiffContainer document comparison type](#Section_51d270c9772b4d1d865e585cd0b5d86c) 108

[NamedShowListDiffContainer document comparison type](#Section_fff0a29d98ff478cb460e2fbe000ab7e) 107

[NamedShowNameAtom slide show type](#Section_41443c4148f440d58ec7e9306d25545c) 186

[NamedShowsContainer slide show type](#Section_a3d04187565b423f90c637d219781b0c) 185

[NamedShowSlidesAtom slide show type](#Section_b90394d690dd4557900ec250d1bfc4f9) 187

[NormalViewSetBarStates enumeration](#Section_9ead9648630049599db0bc8b74770e6c) 469

[NormalViewSetInfoAtom view info type](#Section_b906d23a45d244a2b486545f21676ecd) 126

[NormalViewSetInfoContainer view info type](#Section_5b7a13338de24c50a83838c389db3147) 125

[Normative references](#section_1b008e6195904dfaae357d70c2f6f46e) 21

[Notes slide example](#section_0d430f9017fc473092c990198d19c13b) 531

[NotesAtom slide type](#Section_9bb3e3521014477bb286cd43127c3b74) 165

[NotesContainer slide type](#Section_50bfc0f7c1014c3287546ca59772b785) 157

[NotesDiffContainer document comparison type](#Section_2414449c9ca34ad29aabe195e96ce4df) 124

[NotesHeadersFootersContainer header/footer type](#Section_58fe42d1259e4f809a342567c565125e) 68

[NotesId basic type](#Section_a2ed19fb4b5b4f938ef9baa2284ecd2b) 36

[NotesIdRef basic type](#Section_ac43d4cb9e9d4a2cadb44f3da8381d8e) 36

[NotesListWithTextContainer slide list type](#Section_55453e3706744703bd8dfcaba335f840) 63

[NotesPersistAtom slide list type](#Section_b595ad14a46c4fccb4bd7298712043a4) 64

[NotesRoundTripAtom slide type](#Section_95d576adf038406283f1c8b31e01db00) 158

[NotesTextViewInfoContainer view info type](#Section_caacc34d988c4cbc99f7a4bdf808e723) 128

[NotesViewInfoContainer view info type](#Section_96636c7591464d128099f0f50e382b71) 134

[NoZoomViewInfoAtom view info type](#Section_377e8d7886934fecb31caa890909f4b3) 130

O

[OfficeArtClientAnchor shape type](#Section_37ee18c73c7c4adc91fbcb3b01789d72) 198

[OfficeArtClientAnchorData shape type](#Section_beecde28e2394d88b92c6e9dcf031e39) 199

[OfficeArtClientData shape type](#Section_ac3b454db5ea4da8a57c32fc08ed332a) 199

[OfficeArtClientTextbox text type](#Section_f50070dda4dc4edda446c4fcc5c80ace) 401

[OLE object example](#section_ff524da91f4d4df591e87a734530ad11) 600

[OLEVerbEnum enumeration](#Section_d3f3afeef16e41e7b03832a789f2e85b) 469

[Outline Text example](#section_0d75c31791f747958e6941dde73f9690) 511

[OutlineTextProps10Container text type](#Section_6efc6c99ea7546fc8b36ea94a8e3077f) 393

[OutlineTextProps10Entry text type](#Section_c7cff0baf7494282975f565a7601b0d4) 393

[OutlineTextProps11Container text type](#Section_bd93329d5087408e99027355d31ec82e) 394

[OutlineTextProps11Entry text type](#Section_0411bcbf955d4ae8a51a27128d8a04e1) 394

[OutlineTextProps9Container text type](#Section_6eb16c7f6b6848dbace37347326b3a9d) 391

[OutlineTextProps9Entry text type](#Section_e0d2c3b5c038439caaaee778a1c36c71) 392

[OutlineTextPropsHeaderExAtom text type](#Section_e75ff2cccd874d2e843a3fcaa4440b96) 392

[OutlineTextRefAtom text type](#Section_f120afe11b654deca2cec5f90fe8b317) 403

[OutlineViewInfoContainer view info type](#Section_39073741a8dd47bdb94f857a2850ff62) 130

Overview

[animation](#section_2d005a8fb95e44f4835a13b944c54dc2) 24

[byte ordering](#section_d01b023b5fc64eea9fde0559e44a5ef1) 27

[external objects](#section_330c267279fe468b965e52519e4895dc) 23

[placeholder shapes](#section_b3e45aed219642bd8b88c98dba85ffe4) 23

[presentation](#section_21145b7baeb14e6db82b83f502b64c97) 23

[shapes](#section_a3b4c5de0a094f268dfe0dc24ebcf311) 23

[slide show](#section_83bbe15a04a54a0bb52b016a79f92926) 26

[slides](#section_d2bbd8e36a744d6b8ab5499421ef9f6b) 23

P

[ParaBuildAtom animation type](#Section_8eeb2908927340e8bb4330d07220ba58) 228

[ParaBuildContainer animation type](#Section_4bd5c65e913445eead0d18b57d147c7e) 227

[ParaBuildEnum enumeration](#Section_54aa20499fb84e5293fbad4c95bc5f29) 469

[ParaBuildLevel animation type](#Section_18419a57831c4c22b620b2540292df6c) 230

[Paragraph formatting example](#section_a46a5d5c243e4e6fa85d4e4feb6f7e3c) 606

[ParaSpacing basic type](#Section_f3952baf27cc40f2918b86e42159e0a4) 36

[Persist Objects example](#section_7bd57959d49c48a1940abde37ec93c6f) 509

[PersistDirectoryAtom file structure](#Section_d10a093d860f409cb065aeb24b830505) 43

[PersistDirectoryEntry file structure](#Section_6214b5a67ca24a868a0e5fd3d3eff1c9) 44

[PersistIdRef basic type](#Section_7fbfdcc25bb148eeb886357d39fce18f) 37

[PersistOffsetEntry file structure](#Section_a056484a21324e1eaa546e387f9695cf) 44

[PerSlideHeadersFootersContainer slide type](#Section_0104cfcf37814fbb954d5cd43e2d4e35) 168

[PFMasks text type](#Section_2a02831a088b44e784c9c185ab314a71) 357

[PFWrapFlags text type](#Section_4f9ab03992704588b33f9d580a117a8f) 360

[PhotoAlbumFrameShapeEnum enumeration](#Section_3a61325ee32e4ccd88c8c0ab2e4cd410) 470

[PhotoAlbumInfo10Atom document type](#Section_2782f287ec64433182bc63fb6eb8c98e) 55

[PhotoAlbumLayoutEnum enumeration](#Section_78ebf4895eca4b088feb7c63f69817eb) 470

[pictures stream](#section_150a72bc487f467e994e01270dfaf9bf) 33

[Placeholder shapes overview](#section_b3e45aed219642bd8b88c98dba85ffe4) 23

[PlaceholderAtom shape type](#Section_5a37fba11e7045d8bda4315730bd3c54) 203

[PlaceholderEnum enumeration](#Section_dbfd04be077644d9b408b07f4c951eaf) 471

[PlaceholderSize enumeration](#Section_557f629693464db5bdc05acbc5a33617) 472

[PointStruct structure](#Section_5faffdc98cdf4bd0a2289a122d01b3f2) 459

[PowerPoint document stream](#section_1fc22d5628f94818bd4567c2bf721ccf) 29

[PP10DocBinaryTagExtension document tag info type](#Section_70ef1f3ceacd4b42bbb32f5035b4a0ed) 146

[PP10ShapeBinaryTagExtension shape type](#Section_a5850b953d584723b94902c802af528d) 212

[PP10SlideBinaryTagExtension slide type](#Section_ccb82f60e1ae4379b1e000909bb70b17) 173

[PP11DocBinaryTagExtension document tag info type](#Section_662c3a59f11d4d3fb472c695b4e598a8) 149

[PP11ShapeBinaryTagExtension shape type](#Section_ab3d45de5d374cd69bece6983b085ad9) 213

[PP12DocBinaryTagExtension document tag info type](#Section_5e54a28788bf4d19aeca8aa0a12ddbc7) 150

[PP12SlideBinaryTagExtension slide type](#Section_1d1704d76e3e472296c70fbe7ca8f682) 183

[PP9DocBinaryTagExtension document tag info type](#Section_6eda497b2a6e4c5cb41e4f711c89ffa0) 143

[PP9ShapeBinaryTagExtension shape type](#Section_288d4b7c200a4fbfbfcbe60adba13db8) 211

[PP9SlideBinaryTagExtension slide type](#Section_0ee9570b80ec46f0889aec42dad58baf) 172

[PresAdvisorFlags9Atom document type](#Section_866dc2301b1947bca5a41160b18e846e) 53

[Presentation overview](#section_21145b7baeb14e6db82b83f502b64c97) 23

[Presentation slide example](#section_cb3376a86bd64c62b579081eef2195b5) 520

[PrintableAnsiString basic type](#Section_bcde30fd302f4bf8abf4963b87ad40b3) 37

[PrintableUnicodeString basic type](#Section_7b3104aabe314358b31039775872b257) 37

[PrintOptionsAtom document type](#Section_38013adecfee4bbda443d84822a80173) 58

[PrintWhatEnum enumeration](#Section_3782bb37ad904ef3aa4bb78ebf578e94) 472

[Product behavior](#section_de2e8a1c53a64aaf983d2f5c6a531b4f) 627

[ProgIDAtom external object type](#Section_4bfdd228254e40aba4970e0407079fd0) 414

Programmable tags

[examples](#section_823a8ce25c954365a90d5f82d735df95) 538

[Programmable Tags example](#section_823a8ce25c954365a90d5f82d735df95) 538

[Programmable tags examples](#section_823a8ce25c954365a90d5f82d735df95) 538

[ProgStringTagContainer type](#Section_4c2f2168082c433d8356471fa54af929) 454

Publish type

[FileNameAtom](#Section_2b13333268de4f7ab42d96bc0f130818) 95

[HTMLDocInfo9Atom](#Section_9f9b9371093248ffa775cac417c466ef) 93

[HTMLPublishInfo9Container](#Section_f2f13bae9f7e4ef09e367bfb2fae3e29) 94

[HTMLPublishInfoAtom](#Section_4296eeb2c07643a29a23bf645a2054c6) 96

[NamedShowAtom](#Section_5962eaa99cc04996b9020b4477790727) 96

R

[RatioStruct structure](#Section_32cd4da38d474599ace5d608331e1214) 459

[RecolorEntry shape type](#Section_9270c7eca27544869096a599c1e3234a) 207

[RecolorEntryBrush shape type](#Section_2da771e4494f4258b73b6d011315a3ed) 208

[RecolorEntryColor shape type](#Section_c4059bd1b1474676ada89ca444130e07) 208

[RecolorEntryVariant shape type](#Section_b0b1882fc909422caa59ce136510bf0b) 208

[RecolorInfoAtom shape type](#Section_01ac11fb62734b36932d39b861eb144c) 205

[RecolorInfoDiffContainer document comparison type](#Section_f3301c55be65413c824042f97e72ae65) 119

[RecordHeader file structure](#Section_df2011940cd04dfbbf10eea353d8eabc) 40

[RecordType enumeration](#Section_38fb1fa50a62477a8b14178df22de812) 473

[RectStruct structure](#Section_8a58e3ae268242d082cda41c2999584e) 459

[References](#section_598a4491781845fbb9b91831b44539d0) 21

[informative](#section_eb4276c4b9504898957a2239adc0c6b0) 22

[normative](#section_1b008e6195904dfaae357d70c2f6f46e) 21

[Relationship to protocols and other structures](#section_7a8d5cd6aa2d4149b28db16450449de6) 27

[ReviewerNameAtom document comparison type](#Section_5aa53fdfa0794ce2a27fa1af7106a427) 103

[RGBColor animation type](#Section_92e06186219841e59d3db426ad1adf4b) 289

[RGBColorBy animation type](#Section_34933da86c6e4a90bc499585875457a5) 288

[RoundTripAnimationAtom type](#Section_6360395dcf04485a920324d5ae5591ec) 439

[RoundTripAnimationHashAtom type](#Section_c10e75d664d04e53aa84a06134026ed4) 440

[RoundTripColorMappingAtom type](#Section_b2dc5c0a6b934e40a06ac51b17f32b7a) 441

[RoundTripCompositeMasterId12Atom type](#Section_ae0701f92b464b6c90a049e7cfb20a7e) 441

[RoundTripContentMasterId12Atom type](#Section_e9a4f7c3f3ac4ba2b94c59a93f77d11b) 442

[RoundTripContentMasterInfo12Atom type](#Section_15e1aa8993ac4f248e0e398ecec7897b) 443

[RoundTripCustomTableStyles12Atom type](#Section_fdb1834fa6d8409f83422152025ae8eb) 443

[RoundTripDocFlags12Atom type](#Section_97f683aea7b2430cb4e49b1cc518f35d) 444

[RoundTripHeaderFooterDefaults12Atom type](#Section_016741fdd7aa4958b577c81fe19c179b) 444

[RoundTripHFPlaceholder12Atom type](#Section_ec3baf39684b49d38850d5798f0a1915) 445

[RoundTripMainMasterRecord slide type](#Section_2a26ce591c7b4d5c840532847659490e) 156

[RoundTripNewPlaceholderId12Atom type](#Section_c13cfcfdd6964aecb1f2eafb3bd3977b) 446

[RoundTripNotesMasterTextStyles12Atom type](#Section_50f47937dbe0403eb93ed170d9b6ea0d) 446

[RoundTripOArtTextStyles12Atom type](#Section_92f10e186be94cc19e22fb24856f80d7) 447

[RoundTripOriginalMainMasterId12Atom type](#Section_4ffb4a9b891a41e689cdfd4312d08c90) 447

[RoundTripShapeCheckSumForCustomLayouts12Atom type](#Section_45644f02790a4d0c998e59ab5500c909) 448

[RoundTripShapeId12Atom type](#Section_a3e1963983784a1582db7453be42ddbe) 449

[RoundTripSlideRecord slide type](#Section_fe7a9588d2e044d1b9b1ac2962592448) 153

[RoundTripSlideSyncInfo12Container type](#Section_7ab552d5545048f6816b8cbc266d7803) 449

[RoundTripThemeAtom type](#Section_a50e597e248a41c8a1c370fd0988d609) 452

[RTFDateTimeMCAtom text type](#Section_7aa3736d15cf43b38b450dddf856d946) 386

S

[ScalingStruct structure](#Section_b2cf89e0d255468fa571effd2b34b5b0) 460

[SchemeListElementColorSchemeAtom slide type](#Section_cf7562a6f79f4705a2fb5f5d84bea12d) 167

[ScreenTipAtom external object type](#Section_d2e1c18127b841e088ef702c287fda1b) 420

[Security - implementer considerations](#section_4c5b69e3f597486cac7080e7f97427ba) 626

[ServerIdAtom type](#Section_b008a1461e9e4e4aa0a39a6dd55bbf8a) 450

[Shape anchor example](#section_d959807b3d3041dda5c4c914f4f5098c) 595

[Shape animation example](#section_13b03cf8e1934d7cbeceefee91ea40bd) 556

Shape client data

[examples](#section_aa668d0aa42b47b68113c6bcfaf33d1e) 595

[Shape Client Data example](#section_aa668d0aa42b47b68113c6bcfaf33d1e) 595

[Shape client data examples](#section_aa668d0aa42b47b68113c6bcfaf33d1e) 595

[Shape placeholder example](#section_5be6d1ccca1e404e98df9560291f833b) 597

[Shape text example](#section_f43c091d80bc4ba8b920bec7e17ec9cb) 598

Shape type

[ExObjRefAtom](#Section_d6e17fee7d53453f962bb671a4f8869f) 202

[OfficeArtClientAnchor](#Section_37ee18c73c7c4adc91fbcb3b01789d72) 198

[OfficeArtClientAnchorData](#Section_beecde28e2394d88b92c6e9dcf031e39) 199

[OfficeArtClientData](#Section_ac3b454db5ea4da8a57c32fc08ed332a) 199

[PlaceholderAtom](#Section_5a37fba11e7045d8bda4315730bd3c54) 203

[PP10ShapeBinaryTagExtension](#Section_a5850b953d584723b94902c802af528d) 212

[PP11ShapeBinaryTagExtension](#Section_ab3d45de5d374cd69bece6983b085ad9) 213

[PP9ShapeBinaryTagExtension](#Section_288d4b7c200a4fbfbfcbe60adba13db8) 211

[RecolorEntry](#Section_9270c7eca27544869096a599c1e3234a) 207

[RecolorEntryBrush](#Section_2da771e4494f4258b73b6d011315a3ed) 208

[RecolorEntryColor](#Section_c4059bd1b1474676ada89ca444130e07) 208

[RecolorEntryVariant](#Section_b0b1882fc909422caa59ce136510bf0b) 208

[RecolorInfoAtom](#Section_01ac11fb62734b36932d39b861eb144c) 205

[ShapeClientRoundtripDataSubContainerOrAtom](#Section_92bce4f0921c4b5b92d37ade03646250) 201

[ShapeFlags10Atom](#Section_8eb485b34df1413cbb3264ce5064054d) 202

[ShapeFlagsAtom](#Section_87961734a0f44ba6b4d7cb28d7d6ee78) 201

[ShapeProgBinaryTagContainer](#Section_f72ef91182fc456d9392759ea3940516) 210

[ShapeProgBinaryTagSubContainerOrAtom](#Section_28c25608369e42a798166b3515a4ecca) 211

[ShapeProgTagsContainer](#Section_f8ad5874193e43f08400246b29b606bf) 210

[ShapeProgTagsSubContainerOrAtom](#Section_a9b8cd9324d3426f9c80bd46a72fa2b7) 210

[ShapeClientRoundtripDataSubContainerOrAtom shape type](#Section_92bce4f0921c4b5b92d37ade03646250) 201

[ShapeDiffContainer document comparison type](#Section_c1ec712373fc4f01a3085935234abe33) 115

[ShapeFlags10Atom shape type](#Section_8eb485b34df1413cbb3264ce5064054d) 202

[ShapeFlagsAtom shape type](#Section_87961734a0f44ba6b4d7cb28d7d6ee78) 201

[ShapeListDiffContainer document comparison type](#Section_21ff0b659bae474294bf5e4af99a6b1b) 115

[ShapeProgBinaryTagContainer shape type](#Section_f72ef91182fc456d9392759ea3940516) 210

[ShapeProgBinaryTagSubContainerOrAtom shape type](#Section_28c25608369e42a798166b3515a4ecca) 211

[ShapeProgTagsContainer shape type](#Section_f8ad5874193e43f08400246b29b606bf) 210

[ShapeProgTagsSubContainerOrAtom shape type](#Section_a9b8cd9324d3426f9c80bd46a72fa2b7) 210

[Shapes overview](#section_a3b4c5de0a094f268dfe0dc24ebcf311) 23

[signatures stream](#section_4a3db6efa3ae495aa733fedc92660a00) 34

Slide list type

[MasterListWithTextContainer](#Section_18a9bc043307440ebbc2efcb75ee923d) 59

[MasterPersistAtom](#Section_ffcca362b8604a3d900e5c03f02c1775) 60

[NotesListWithTextContainer](#Section_55453e3706744703bd8dfcaba335f840) 63

[NotesPersistAtom](#Section_b595ad14a46c4fccb4bd7298712043a4) 64

[SlideListWithTextContainer](#Section_307e6d12730447a8acbd3e7b8041ad3c) 60

[SlideListWithTextSubContainerOrAtom](#Section_fc198575e6fc420f86936714469eb710) 61

[SlidePersistAtom](#Section_48dce41296924f93aeb73d9fdd3a0a5a) 62

[Slide programmable tag example](#section_669d0590c88242638aa15a9fb88fa053) 541

Slide show

[named show](#section_16da3b4e8114473ebf6c0837daf9f370) 26

[slide transitions](#section_3a97f975520a4f4badb818d089ded4ed) 26

[Slide show overview](#section_83bbe15a04a54a0bb52b016a79f92926) 26

Slide show type

[InteractiveInfoAtom](#Section_ea14f5f4b0c2455e9a717e7a8bc343c7) 196

[InteractiveInfoInstance](#Section_9225f32d5eb146b38ebd442bffded30d) 195

[MacroNameAtom](#Section_7f850503c5444c8798172f1368632b70) 197

[MouseClickInteractiveInfoContainer](#Section_cc0910dd1aae4da9afa958a386333bcb) 195

[MouseOverInteractiveInfoContainer](#Section_8714c89a4bb34fa581650742725cf755) 196

[NamedShowContainer](#Section_a397a8a306f54fe780ea10ead0e1aeb0) 186

[NamedShowNameAtom](#Section_41443c4148f440d58ec7e9306d25545c) 186

[NamedShowsContainer](#Section_a3d04187565b423f90c637d219781b0c) 185

[NamedShowSlidesAtom](#Section_b90394d690dd4557900ec250d1bfc4f9) 187

[SlideShowDocInfoAtom](#Section_6d266473cadd49ada3cb9f3601365b9e) 184

[SlideShowSlideInfoAtom](#Section_10dc4455c5d8472086468cde8644a040) 188

[Slide transitions](#section_3a97f975520a4f4badb818d089ded4ed) 26

Slide type

[Comment10Atom](#Section_75f276597c4b4bf3ad31d5e221c24494) 178

[Comment10AuthorAtom](#Section_e6a12f24381941caa4c6df5065ca75ec) 176

[Comment10AuthorInitialAtom](#Section_e4516e96f95c43589e69c7e58ef19061) 177

[Comment10Container](#Section_1a15453d859f48ee8dcd4d51ab9227f8) 175

[Comment10TextAtom](#Section_509e23de68384693b586dace9899c2c8) 177

[DrawingContainer](#Section_0595b49fda964402b3531f766e9d548f) 166

[HandoutContainer](#Section_bf6d1f839023412089c3fb69e49d0212) 158

[HandoutRoundTripAtom](#Section_245d3c1ee2b84468bea0464be6251e09) 159

[LinkedShape10Atom](#Section_4ad01f52581d4163b6cebd48fdeba54f) 182

[LinkedSlide10Atom](#Section_2a277bb42dbe493494c1004b7122ce4d) 180

[MainMasterContainer](#Section_e2f5fbf3d790487eb96b5ccdee0f0aa8) 153

[MasterOrSlideContainer](#Section_018cc2701573402aa3e8d83e8dc96813) 156

[NotesAtom](#Section_9bb3e3521014477bb286cd43127c3b74) 165

[NotesContainer](#Section_50bfc0f7c1014c3287546ca59772b785) 157

[NotesRoundTripAtom](#Section_95d576adf038406283f1c8b31e01db00) 158

[PerSlideHeadersFootersContainer](#Section_0104cfcf37814fbb954d5cd43e2d4e35) 168

[PP10SlideBinaryTagExtension](#Section_ccb82f60e1ae4379b1e000909bb70b17) 173

[PP12SlideBinaryTagExtension](#Section_1d1704d76e3e472296c70fbe7ca8f682) 183

[PP9SlideBinaryTagExtension](#Section_0ee9570b80ec46f0889aec42dad58baf) 172

[RoundTripMainMasterRecord](#Section_2a26ce591c7b4d5c840532847659490e) 156

[RoundTripSlideRecord](#Section_fe7a9588d2e044d1b9b1ac2962592448) 153

[SchemeListElementColorSchemeAtom](#Section_cf7562a6f79f4705a2fb5f5d84bea12d) 167

[SlideAtom](#Section_57e11e6ce5504c4380b672731eee8abd) 160

[SlideContainer](#Section_4cac097673d04ab3a70be98b3cf1c312) 151

[SlideFlags](#Section_a840eba8ed0347a0a0c9769236e21a0b) 165

[SlideFlags10Atom](#Section_dcf6722b32014b61b109384b7f80f559) 179

[SlideNameAtom](#Section_3b52355ff13f4a20b967be4b42dc6ac5) 169

[SlideProgBinaryTagContainer](#Section_e25eb8d2627e4104b293fc8ed82a098c) 171

[SlideProgBinaryTagSubContainerOrAtom](#Section_ac9aa6bd3c1549bd81d95b8bfd966053) 171

[SlideProgTagsContainer](#Section_c2263e42180e4249bd93a421efd8719b) 170

[SlideProgTagsSubContainerOrAtom](#Section_2bc67516d5ab4d9d86761a825c64c2a8) 171

[SlideSchemeColorSchemeAtom](#Section_9cfca750dabb4967b1332583a9f8c392) 167

[SlideTime10Atom](#Section_d5e12b9941514c289d8652328381c974) 179

[TemplateNameAtom](#Section_cebe780b49ee491b81a10f90d3872e03) 169

[SlideAtom slide type](#Section_57e11e6ce5504c4380b672731eee8abd) 160

[SlideContainer slide type](#Section_4cac097673d04ab3a70be98b3cf1c312) 151

[SlideDiffContainer document comparison type](#Section_899d425cba9b4a3eb5ab64f65b2897f3) 112

[SlideFlags slide type](#Section_a840eba8ed0347a0a0c9769236e21a0b) 165

[SlideFlags10Atom slide type](#Section_dcf6722b32014b61b109384b7f80f559) 179

[SlideHeadersFootersContainer header/footer type](#Section_c1ff52ebb70a4de3a03385eefc7a25a8) 65

[SlideId basic type](#Section_747d514b9d774a728b61fe226882944c) 37

[SlideIdRef basic type](#Section_74a76957a2534455b8a4f82e650808fb) 38

[SlideLayoutType enumeration](#Section_df8f3d7bdb6747dc8c8920f5cbbf0fa9) 482

[SlideLibUrlAtom type](#Section_4f0d845d959e4deea2d7a4701a51a0b9) 451

[SlideListDiffContainer document comparison type](#Section_1d3c490c38884f5d91e4cc059baf4a65) 109

[SlideListEntry10Atom document comparison type](#Section_29e7a9d4974845d6abaa921772ca43a3) 101

[SlideListTable10Container document comparison type](#Section_42463f5b55c7457598467f4b412228aa) 100

[SlideListTableSize10Atom document comparison type](#Section_e0b1efea693c480fa45b857c54124a2a) 101

[SlideListWithTextContainer slide list type](#Section_307e6d12730447a8acbd3e7b8041ad3c) 60

[SlideListWithTextSubContainerOrAtom slide list type](#Section_fc198575e6fc420f86936714469eb710) 61

[SlideNameAtom slide type](#Section_3b52355ff13f4a20b967be4b42dc6ac5) 169

[SlideNumberMCAtom text type](#Section_3f61519995ec48c0acb4dd98f0f29560) 377

[SlidePersistAtom slide list type](#Section_48dce41296924f93aeb73d9fdd3a0a5a) 62

[SlideProgBinaryTagContainer slide type](#Section_e25eb8d2627e4104b293fc8ed82a098c) 171

[SlideProgBinaryTagSubContainerOrAtom slide type](#Section_ac9aa6bd3c1549bd81d95b8bfd966053) 171

[SlideProgTagsContainer slide type](#Section_c2263e42180e4249bd93a421efd8719b) 170

[SlideProgTagsSubContainerOrAtom slide type](#Section_2bc67516d5ab4d9d86761a825c64c2a8) 171

Slides

[examples](#section_abdcb7cd4cc142fea805ed89403b4fae) 518

[Slides example](#section_abdcb7cd4cc142fea805ed89403b4fae) 518

[Slides examples](#section_abdcb7cd4cc142fea805ed89403b4fae) 518

[Slides overview](#section_d2bbd8e36a744d6b8ab5499421ef9f6b) 23

[SlideSchemeColorSchemeAtom slide type](#Section_9cfca750dabb4967b1332583a9f8c392) 167

[SlideShowDiffContainer document comparison type](#Section_68fde33d71a0419380509f0dbd2301de) 123

[SlideShowDocInfoAtom slide show type](#Section_6d266473cadd49ada3cb9f3601365b9e) 184

[SlideShowSlideInfoAtom slide show type](#Section_10dc4455c5d8472086468cde8644a040) 188

SlideSizeEnum enumeration ([section 2.13.26](#Section_2e9fc1fd73db465f93e17f975b7f14a6) 483, [section 2.13.27](#Section_5fe09a4e204e41dda1e683ea729e0f25) 483)

[SlideSyncInfoAtom12 type](#Section_54c75042f4af4a228d8d59df15f87557) 451

[SlideTime10Atom slide type](#Section_d5e12b9941514c289d8652328381c974) 179

[SlideViewInfoAtom view info type](#Section_bb7145715b154cd8a28c4437c4e1ad15) 133

[SlideViewInfoContainer view info type](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3) 132

[SlideViewInfoInstance view info type](#Section_b2b53b7fd4c145a9948e3e0e7d168164) 132

[SmallRectStruct structure](#Section_e47cb9738480499590b2008bcb2ffc65) 460

[SmartTagIndex basic type](#Section_9ab29cb27b03495b94b704cd42c076f4) 38

[SmartTags text type](#Section_30a82ae1f03e405790d5fe1c7e69b744) 367

[SmartTagStore11Container type](#Section_f6735fdfc53746fb82dfb509a9d80faa) 453

[SorterViewInfoContainer view info type](#Section_7184066996c54d7a9a9aeb5184c1626e) 135

Sound type

[SoundBuiltinIdAtom](#Section_430f8098998a4b9a8e9ef93b5d2dce08) 74

[SoundCollectionAtom](#Section_e74f6ee22f184b8e8ba514594f5121ae) 70

[SoundCollectionContainer](#Section_8b25294d1485419fa85f48580b8cfbef) 69

[SoundContainer](#Section_8c5498fa18324659a02bd23e28ef21b3) 71

[SoundExtensionAtom](#Section_9cd28f87c72244dcadc5ed72233e19cf) 72

[SoundIdAtom](#Section_00d3b37fe99a43e0b5e8578c0c9a9a94) 73

[SoundNameAtom](#Section_f593b2eb8e414e02aed5143e2f109497) 72

[SoundBuiltinIdAtom sound type](#Section_430f8098998a4b9a8e9ef93b5d2dce08) 74

[SoundCollectionAtom sound type](#Section_e74f6ee22f184b8e8ba514594f5121ae) 70

[SoundCollectionContainer sound type](#Section_8b25294d1485419fa85f48580b8cfbef) 69

[SoundContainer sound type](#Section_8c5498fa18324659a02bd23e28ef21b3) 71

[SoundDataBlob type](#Section_e28036d86cea4142b823ed856b87eb52) 454

[SoundExtensionAtom sound type](#Section_9cd28f87c72244dcadc5ed72233e19cf) 72

[SoundIdAtom sound type](#Section_00d3b37fe99a43e0b5e8578c0c9a9a94) 73

[SoundIdRef basic type](#Section_bf8d9ac911b2471ca1efbdbbb2cde388) 38

[SoundNameAtom sound type](#Section_f593b2eb8e414e02aed5143e2f109497) 72

[SpellingFlags text type](#Section_c878a17b61f745a893e2499c5f8034cb) 367

[storage](#section_40592fe5a973455088d904246bcc9ecd) 29

[Storages](#section_40592fe5a973455088d904246bcc9ecd) 29

Structure

[ColorIndexStruct](#Section_5d6b0509f3c7435f9bf46f1fc5f8293c) 457

[ColorStruct](#Section_473e1e57703f4497a57eea75f0746c1f) 457

[DateTimeStruct](#Section_2da0b9bf164f403dbf1bf8b83b2af166) 458

[file streams](#section_40592fe5a973455088d904246bcc9ecd) 29

[PointStruct](#Section_5faffdc98cdf4bd0a2289a122d01b3f2) 459

[RatioStruct](#Section_32cd4da38d474599ace5d608331e1214) 459

[RectStruct](#Section_8a58e3ae268242d082cda41c2999584e) 459

[ScalingStruct](#Section_b2cf89e0d255468fa571effd2b34b5b0) 460

[SmallRectStruct](#Section_e47cb9738480499590b2008bcb2ffc65) 460

[storages](#section_40592fe5a973455088d904246bcc9ecd) 29

[TmsfTimeStruct](#Section_013e697db1274c1db558c0aac04916d5) 461

[WideColorStruct](#Section_c03b38b48b9c4c5f914ce9819b228619) 458

[StyleTextProp10Atom text type](#Section_663f260adf984185b4fdf092d3826548) 397

[StyleTextProp11 text type](#Section_4d3465183db8487fb2a8a1e41035f628) 398

[StyleTextProp11Atom text type](#Section_b0e6e86508654d1bb5d3a2a805725915) 397

[StyleTextProp9 text type](#Section_fb67da927dd849649e44b8b92291ee87) 396

[StyleTextProp9Atom text type](#Section_b046e29f7ff04ac69456b014d812748f) 395

[StyleTextPropAtom text type](#Section_a9a5fa71238d491eacc7fa1fffd5f100) 375

[SubEffectContainer animation type](#Section_8f1586ac86864bda9ba58cc43ba91642) 238

Summary info type

[BookmarkCollectionContainer](#Section_7effe2aab7ab4318884b5b19c12e0ec7) 138

[BookmarkEntityAtom](#Section_a2f2dfbe96e6466eb37b3310416a47ec) 140

[BookmarkEntityAtomContainer](#Section_ce4e89a1983e45e997040f804e1b84cd) 139

[BookmarkSeedAtom](#Section_0fc3da910db242eb9128ca850db20ab6) 138

[BookmarkValueAtom](#Section_4dc746d99d91462396eaa1256e728534) 141

[CopyrightAtom](#Section_9d4029f9d39c4f59910ada60d75c46db) 136

[KeywordsAtom](#Section_a549e2ed7f644b4a927ea22e76ffd213) 136

[SummaryContainer](#Section_446dee5f73d04ea3bc6d04afeadfd6e8) 137

[summary information stream](#section_dfea964e936f42bb838c3fc19909cc32) 33

[SummaryContainer summary info type](#Section_446dee5f73d04ea3bc6d04afeadfd6e8) 137

T

[TabCrLfPrintableUnicodeString basic type](#Section_1a867a3571714f09b56760dea80412f2) 38

[TableDiffContainer document comparison type](#Section_a3e432fbcc1547eebb2fc7f5838118e9) 122

[TableListDiffContainer document comparison type](#Section_ca72b575025f4d6da4b6bcb00527b746) 121

[TabSize basic type](#Section_8b1533a8e2104bcebb11fdb1301a27bc) 38

[TabStop text type](#Section_2b8ecabd6a6f426c9eecc1623611a1e8) 359

[TabStops text type](#Section_89ee352d52194cf29a562a67fe85b201) 359

[TagNameAtom type](#Section_274ba042a7134d939542cc31967c0857) 455

[TagValueAtom type](#Section_11f5be351e644038bd7e6e6248f0b43f) 455

[TargetAtom external object type](#Section_6a84616800154544a3c345f56e9577d8) 418

[TemplateNameAtom slide type](#Section_cebe780b49ee491b81a10f90d3872e03) 169

Text

[examples](#section_0671ec5911024c8fb2fbec549db17d8b) 606

[Text animation example](#section_d8b47ac92a8e4c8b88b49f58d893bdad) 542

[Text example](#section_0671ec5911024c8fb2fbec549db17d8b) 606

[Text examples](#section_0671ec5911024c8fb2fbec549db17d8b) 606

Text type

[BlipCollection9Container](#Section_8a93931e05c148be8824deb1c4489c14) 399

[BlipEntityAtom](#Section_f1aeacfe24af425c8bb13333b4f8e7f6) 399

[BulletFlags](#Section_06ef8761a2344e81892f3d4a2f789529) 358

[CFMasks](#Section_bbca8581d0114293a375b209523cf962) 351

[CFStyle](#Section_3ea010b90ef94c059982618130ca66cd) 352

[DateTimeMCAtom](#Section_668ab84bf0b24496af11b9d1b04e840a) 379

[DefaultRulerAtom](#Section_f126079c590540fbb2d70f478adb44b8) 362

[DocumentTextInfoContainer](#Section_6a08728e04f84cc1831773cefa178870) 339

[FontCollection10Container](#Section_8c62fed6394f4c49ae8aa73c2a8026d1) 348

[FontCollectionContainer](#Section_88da04bf68384f879a87adf067543837) 346

[FontCollectionEntry](#Section_fb4d26df15c74f978d8f6c73ea98e91d) 346

[FontEmbedFlags10Atom](#Section_ec7445456e724d648280d96ac7b28a04) 349

[FontEntityAtom](#Section_b5946b702fbc4f7ba119b31fcbeb1794) 347

[FooterMCAtom](#Section_5a2fa1e2bc5f450b89d0b372a811313a) 378

[GenericDateMCAtom](#Section_a212a37760444ec2a5948c59be237125) 386

[HeaderMCAtom](#Section_d7ed28bf83ef45e5a57b2384f8b03423) 378

[Kinsoku9Atom](#Section_1ad9ce1b530247c18706c137a541efe9) 344

[Kinsoku9Container](#Section_78abb8b8747b428ebfbac8f8ca6c6b38) 343

[KinsokuAtom](#Section_f4aeb62ddb3148ed9ab76369697a62b7) 342

[KinsokuContainer](#Section_d22fdfcfb0334a9ab4beabc379ad0039) 341

[KinsokuFollowingAtom](#Section_009ecdc1817c4fb0a286eebd73f8fd06) 343

[KinsokuLeadingAtom](#Section_2a0209cc48b34505a201853c17e88d65) 342

[MasterTextPropAtom](#Section_c80e1825db844e21a3d717068b1248c2) 404

[MasterTextPropRun](#Section_1454a4e7ef70445588261652b46394dd) 404

[MouseClickTextInteractiveInfoAtom](#Section_1efdc2bfa11d40928128147b3602be87) 389

[MouseOverTextInteractiveInfoAtom](#Section_93a2cd280426415da67fec6f3f781a09) 390

[OfficeArtClientTextbox](#Section_f50070dda4dc4edda446c4fcc5c80ace) 401

[OutlineTextProps10Container](#Section_6efc6c99ea7546fc8b36ea94a8e3077f) 393

[OutlineTextProps10Entry](#Section_c7cff0baf7494282975f565a7601b0d4) 393

[OutlineTextProps11Container](#Section_bd93329d5087408e99027355d31ec82e) 394

[OutlineTextProps11Entry](#Section_0411bcbf955d4ae8a51a27128d8a04e1) 394

[OutlineTextProps9Container](#Section_6eb16c7f6b6848dbace37347326b3a9d) 391

[OutlineTextProps9Entry](#Section_e0d2c3b5c038439caaaee778a1c36c71) 392

[OutlineTextPropsHeaderExAtom](#Section_e75ff2cccd874d2e843a3fcaa4440b96) 392

[OutlineTextRefAtom](#Section_f120afe11b654deca2cec5f90fe8b317) 403

[PFMasks](#Section_2a02831a088b44e784c9c185ab314a71) 357

[PFWrapFlags](#Section_4f9ab03992704588b33f9d580a117a8f) 360

[RTFDateTimeMCAtom](#Section_7aa3736d15cf43b38b450dddf856d946) 386

[SlideNumberMCAtom](#Section_3f61519995ec48c0acb4dd98f0f29560) 377

[SmartTags](#Section_30a82ae1f03e405790d5fe1c7e69b744) 367

[SpellingFlags](#Section_c878a17b61f745a893e2499c5f8034cb) 367

[StyleTextProp10Atom](#Section_663f260adf984185b4fdf092d3826548) 397

[StyleTextProp11](#Section_4d3465183db8487fb2a8a1e41035f628) 398

[StyleTextProp11Atom](#Section_b0e6e86508654d1bb5d3a2a805725915) 397

[StyleTextProp9](#Section_fb67da927dd849649e44b8b92291ee87) 396

[StyleTextProp9Atom](#Section_b046e29f7ff04ac69456b014d812748f) 395

[StyleTextPropAtom](#Section_a9a5fa71238d491eacc7fa1fffd5f100) 375

[TabStop](#Section_2b8ecabd6a6f426c9eecc1623611a1e8) 359

[TabStops](#Section_89ee352d52194cf29a562a67fe85b201) 359

[TextAutoNumberScheme](#Section_161f5b5d336545eb9b1c0bf8a7190287) 361

[TextBookmarkAtom](#Section_5eeac20cc3cc45a789185a96c9f394a1) 387

[TextBytesAtom](#Section_80aae34b269943fa9e6ac560ae790cd7) 374

[TextCFException](#Section_c75024a214cb4d7d9964bdab2fcd9d93) 350

[TextCFException10](#Section_77fea531e8394bc9b8137adc3f2adea0) 354

[TextCFException9](#Section_589af75ae0c34592b1f29471a0fa24a3) 353

TextCFExceptionAtom ([section 2.9.13](#Section_1130b69a13264feda16556ef29921312) 349, [section 2.9.19](#Section_ec7fbd0dcb3347ad94dc41788732df14) 355)

[TextCFRun](#Section_426f313aa4f34ffba0419a74ccf23f17) 377

[TextCharsAtom](#Section_a3c5c8d5e5304167a2427743bc99aeac) 374

[TextClientDataSubContainerOrAtom](#Section_5e90593583704c55a3f9ddf0e143d276) 402

[TextDefaults10Atom](#Section_43975b61904e46c38d4bec08ed1fcb22) 401

[TextDefaults9Atom](#Section_ab49e0370973424eb155250559a98723) 400

[TextHeaderAtom](#Section_08d31a6607504009b41649f2871cd178) 372

[TextInteractiveInfoInstance](#Section_824e7fc09f994135b1f30fbd5597f5fd) 389

[TextMasterStyle10Atom](#Section_72dd8636450c451fa60d9faddcff72be) 371

[TextMasterStyle10Levels](#Section_e32c88b5ce1a4a8282c13c740433a04a) 372

[TextMasterStyle9Atom](#Section_7e0b6a7e059145769dd02305bd8c0323) 369

[TextMasterStyle9Level](#Section_adfd57bc4c134f27854fce73ddbcd0c0) 370

[TextMasterStyleAtom](#Section_5febad270c484f98b655562b986f5874) 367

[TextMasterStyleLevel](#Section_b033d0f4aa9643dca333835849858f1f) 369

[TextPFException](#Section_c15a13b3db2c4b50a7e608045581a663) 355

[TextPFException9](#Section_3e80f159dab6415da40918ea6975b0c9) 360

[TextPFRun](#Section_4e95a4f9a9af42b5b81af8f991cb1418) 376

[TextRange](#Section_7bdc8284595a40c29a2f5245c1fda304) 390

[TextRuler](#Section_36b5f25afd5d4db18735dcb06a84fe30) 363

[TextRulerAtom](#Section_e8487b82d9664193a6752b39f4adf647) 362

[TextSIException](#Section_c4be3fe8ac2d42b485bb2647078f4c53) 365

[TextSIExceptionAtom](#Section_4713a7ea63624fd88231a32637a6c3d2) 365

[TextSIRun](#Section_bc49480fbe724f1ab8e1708ee109cb1f) 388

[TextSpecialInfoAtom](#Section_382afea69dc34b6c820611abef8b8366) 388

[TextAutoNumberScheme text type](#Section_161f5b5d336545eb9b1c0bf8a7190287) 361

[TextAutoNumberSchemeEnum enumeration](#Section_45509009f8f14d81836a2de06839d4ac) 484

[TextBookmarkAtom text type](#Section_5eeac20cc3cc45a789185a96c9f394a1) 387

[TextBuildSubEffectEnum enumeration](#Section_42f272ca73634e5098aeaa66da123624) 485

[TextBytesAtom text type](#Section_80aae34b269943fa9e6ac560ae790cd7) 374

[TextCFException text type](#Section_c75024a214cb4d7d9964bdab2fcd9d93) 350

[TextCFException10 text type](#Section_77fea531e8394bc9b8137adc3f2adea0) 354

[TextCFException9 text type](#Section_589af75ae0c34592b1f29471a0fa24a3) 353

TextCFExceptionAtom text type ([section 2.9.13](#Section_1130b69a13264feda16556ef29921312) 349, [section 2.9.19](#Section_ec7fbd0dcb3347ad94dc41788732df14) 355)

[TextCFRun text type](#Section_426f313aa4f34ffba0419a74ccf23f17) 377

[TextCharsAtom text type](#Section_a3c5c8d5e5304167a2427743bc99aeac) 374

[TextClientDataSubContainerOrAtom text type](#Section_5e90593583704c55a3f9ddf0e143d276) 402

[TextDefaults10Atom text type](#Section_43975b61904e46c38d4bec08ed1fcb22) 401

[TextDefaults9Atom text type](#Section_ab49e0370973424eb155250559a98723) 400

[TextDiffContainer document comparison type](#Section_51f0806e0d314075b25784d19dbe6ca5) 118

[TextDirectionEnum enumeration](#Section_764983cc84564fcc9712e93cbf15acf9) 486

[TextFontAlignmentEnum enumeration](#Section_c642180e61ca4a05868731a0cf5a5495) 486

[TextHeaderAtom text type](#Section_08d31a6607504009b41649f2871cd178) 372

[TextInteractiveInfo example](#section_a5b024ec31a644f8be516a3b6d2f1cb0) 619

[TextInteractiveInfoInstance text type](#Section_824e7fc09f994135b1f30fbd5597f5fd) 389

[TextMasterStyle10Atom text type](#Section_72dd8636450c451fa60d9faddcff72be) 371

[TextMasterStyle10Levels text type](#Section_e32c88b5ce1a4a8282c13c740433a04a) 372

[TextMasterStyle9Atom text type](#Section_7e0b6a7e059145769dd02305bd8c0323) 369

[TextMasterStyle9Level text type](#Section_adfd57bc4c134f27854fce73ddbcd0c0) 370

[TextMasterStyleAtom text type](#Section_5febad270c484f98b655562b986f5874) 367

[TextMasterStyleLevel text type](#Section_b033d0f4aa9643dca333835849858f1f) 369

[TextPFException text type](#Section_c15a13b3db2c4b50a7e608045581a663) 355

[TextPFException9 text type](#Section_3e80f159dab6415da40918ea6975b0c9) 360

[TextPFRun text type](#Section_4e95a4f9a9af42b5b81af8f991cb1418) 376

[TextPosition basic type](#Section_7f3c80c201d94cb997f2adb082b01a35) 38

[TextRange text type](#Section_7bdc8284595a40c29a2f5245c1fda304) 390

[TextRuler text type](#Section_36b5f25afd5d4db18735dcb06a84fe30) 363

[TextRulerAtom text type](#Section_e8487b82d9664193a6752b39f4adf647) 362

[TextSIException text type](#Section_c4be3fe8ac2d42b485bb2647078f4c53) 365

[TextSIExceptionAtom text type](#Section_4713a7ea63624fd88231a32637a6c3d2) 365

[TextSIRun text type](#Section_bc49480fbe724f1ab8e1708ee109cb1f) 388

[TextSpecialInfoAtom text type](#Section_382afea69dc34b6c820611abef8b8366) 388

[TextTabTypeEnum enumeration](#Section_b4e867fbbd7a4f97a5c8127693a442dc) 486

[TextTypeEnum enumeration](#Section_50118cd348c243299a406a0281e960b6) 486

[TimeAnimateBehaviorAtom animation type](#Section_17969574b32f4ab0b6d6f5bb1a04f6fe) 265

[TimeAnimateBehaviorContainer animation type](#Section_bc65cd1c14a74c0dbc2d192bab64a713) 263

[TimeAnimateBehaviorValueTypeEnum enumeration](#Section_2817d0100a0347dd82993610e25a4645) 487

[TimeAnimateColor animation type](#Section_543d75a1d95d45aa8736547b8b0c7e62) 289

[TimeAnimateColorBy animation type](#Section_e55e201bb36b47a89b054903cfcf2941) 287

[TimeAnimationValueAtom animation type](#Section_65496e4f4e9743beb68e4f1355f41aa3) 270

[TimeAnimationValueListContainer animation type](#Section_9177feba1a8140b8950dd1de63ae8ee7) 267

[TimeAnimationValueListEntry animation type](#Section_be583d6811d743c2a3008ef2ffac7841) 267

[TimeBehaviorAtom animation type](#Section_9f996c4a3780415c9a6771d323788f95) 272

[TimeBehaviorContainer animation type](#Section_8d75cc5b6f804b2e980ba521e2691e54) 271

[TimeColorBehaviorAtom animation type](#Section_82b99b3c9e2e43778bf326b0e69537a5) 286

[TimeColorBehaviorContainer animation type](#Section_cb85aaf6b3b04865ac6dd4eccb3ebac1) 285

[TimeColorBehaviorPropertyUsedFlag animation type](#Section_1949c9462a334a0b8f42d700a5ab7735) 287

[TimeColorDirection animation type](#Section_0299e331262745c59fe0541de33dcaa8) 277

[TimeColorModel animation type](#Section_3c4894dddd604fde8e92a0d9bcd730ff) 276

[TimeCommandBehaviorAtom animation type](#Section_19b49fc55a7f4022ba930df4d5269bb3) 330

[TimeCommandBehaviorContainer animation type](#Section_d188069b704c4f9d838898a7eb357f0f) 328

[TimeCommandBehaviorTypeEnum enumeration](#Section_c4bc4b37b85647f2a88f738f87f14b2d) 487

[TimeConditionAtom animation type](#Section_6d79388473f24b87b8b1a1b0e6310ad6) 335

[TimeConditionContainer animation type](#Section_3b2ae2ff52fc405b8c3afd0702f490d3) 334

[TimeDisplayType animation type](#Section_4ce3979934b1456a9a21dc5dda7c0d21) 243

[TimeEffectBehaviorAtom animation type](#Section_bf8ed545f2f548528ffb7b69c6ddc128) 295

[TimeEffectBehaviorContainer animation type](#Section_498a5d0f07254a06a7de7c67394e9146) 290

[TimeEffectID animation type](#Section_35c58b5655324d778c3353a82efb5a89) 246

[TimeEffectNodeType animation type](#Section_20f25cbe85c347a9b8ab5d4f9e82d6ed) 262

[TimeEffectType animation type](#Section_989fce31f9b845a8a358361ca53d7a3d) 259

[TimeEventFilter animation type](#Section_a4433ce8d99e43a6999c1387161c610d) 261

[TimeGroupID animation type](#Section_da6bcd4790ea44a692a0aeca9c2864e4) 261

[TimeIterateDataAtom animation type](#Section_96e2df55a3be4175a8307dc3c3ae46ca) 330

[Timeline](#section_78efd251ec204bbdaee07c0bfce12c31) 24

[TimeMasterRelType animation type](#Section_a55a946ac8df4659a2934fe3370e4706) 244

[TimeModifierAtom animation type](#Section_bbfa8706196c4508934c8007a84773ea) 336

[TimeMotionBehaviorAtom animation type](#Section_0c7cb657218342c8ae2e887766db0815) 298

[TimeMotionBehaviorContainer animation type](#Section_40b9860a04a54946ae4b51fdd1176cec) 296

[TimeNodeAtom animation type](#Section_a6b40fd7decd4d6e991a10394458c6a8) 240

[TimeNodeTimeFilter animation type](#Section_41a5d8b9c0014fecaf559903e8a7a482) 260

[TimeNodeTypeEnum enumeration](#Section_8b2c01817e764bc79372285dcb67ae6f) 487

[TimeOverride animation type](#Section_20ce9a318eaa4a42b957b9111be76b2c) 277

[TimePointsTypes animation type](#Section_1656e976a2c14a19a9e9dccd516f24af) 279

TimePropertyID4TimeBehavior enumeration ([section 2.13.37](#Section_5cb9da332a5e4738bd1c717db16bbcc6) 488, [section 2.13.38](#Section_582b9812deec41e3a3674016878ca98c) 488)

[TimePropertyList4TimeBehavior animation type](#Section_51c4cc592d584ac98b254abc1040780d) 274

[TimePropertyList4TimeNodeContainer animation type](#Section_d6d7cd40b40d4e5090e8bb5464ef07c2) 241

[TimeRotationBehaviorAtom animation type](#Section_0fc7d6f315a0464b958c6bfdbf874050) 300

[TimeRotationBehaviorContainer animation type](#Section_2ef1f0c624534be7875ea1a7d7201580) 300

[TimeRuntimeContext animation type](#Section_4c48cb5aae834962a0ac994008e08193) 278

[TimeScaleBehaviorAtom animation type](#Section_4e1b5b50334d4aa5a00c4d95f087b148) 302

[TimeScaleBehaviorContainer animation type](#Section_1d1af5b2ee6a404aa9fdbcbc16b96f1a) 302

[TimeSequenceDataAtom animation type](#Section_342b92a273df4b0b9878862f3532d570) 332

[TimeSetBehaviorAtom animation type](#Section_f8876381cf7f4d2b9888965e2929c9dc) 327

[TimeSetBehaviorContainer animation type](#Section_5428095fe4c443d0ad36b8b240e1338b) 304

[TimeStringListContainer animation type](#Section_99109d34b306454e8e19da1f090cedd9) 273

[TimeSubType animation type](#Section_ac877ddb3911491f8026d11051aa0b63) 245

[TimeVariant animation type](#Section_8080ab7d824644d882c5a20d1b92dc6c) 336

[TimeVariant4Behavior animation type](#Section_758f23158ef74f1d81da41ed4ab6683a) 275

[TimeVariant4TimeNode animation type](#Section_1cbe764818fe4205b2c738163c85daf7) 242

[TimeVariantBool animation type](#Section_c8267defadc64a0c9f6dc9d2498ab9d5) 337

[TimeVariantFloat animation type](#Section_8b7a8b5faf3841f182e2690112fd633c) 338

[TimeVariantInt animation type](#Section_d9647022f6834f1a9267cc8519053318) 337

[TimeVariantString animation type](#Section_c53f2602385449249a6349400ec6255c) 339

[TimeVariantTypeEnum enumeration](#Section_9900a3e8334a470583969b25de7958bc) 489

[TimeVisualElementEnum enumeration](#Section_203c5f54666740468a63915100e25880) 489

[TmsfTimeStruct structure](#Section_013e697db1274c1db558c0aac04916d5) 461

[Tracking changes](#section_c62a2a71e5de490caa6ed3127da48a08) 634

[TriggerObjectEnum enumeration](#Section_bdd8b7511e27473f92d8e8947888274a) 489

[TxLCID basic type](#Section_118aee24b6cd415cbc7e756ea0dfcd2d) 39

U

[UncOrLocalPath basic type](#Section_dd863c41d58d487381f39a6cb84a718c) 39

[UncOrLocalPathAtom external object type](#Section_b376f887227b4f538600fa036403ce05) 409

[UncPath basic type](#Section_c6b4538aca1544e18f013311f5d28071) 39

[UncPathOrHttpUrl basic type](#Section_f3d6c1dc5dec437898017ff13a00f248) 39

[UnicodeString basic type](#Section_069fadd944684ce28f0e8b08d6e319ea) 39

[UnknownBinaryTag type](#Section_4f7ad45eb5844a93b481894f5c671160) 456

[UserDateAtom header/footer type](#Section_59b1690f1aea4b12846f3a1bec342425) 66

[UserEditAtom file structure](#Section_3ffb3fab95de487398aad508fbbac981) 42

[Utf8UnicodeString basic type](#Section_d28ec6ef8a0e4351b4b8ec5c70ccdd76) 39

V

[VBAInfoAtom document type](#Section_93d20ef2151443f9901c50c56d3a3073) 57

[VBAInfoContainer document type](#Section_ca0b2c2bb1f8429890bd45296415f0a6) 56

[VbaProjectStg external object type](#Section_6c391284f2e14b90a93f780e6a8519ff) 432

[VbaProjectStgCompressedAtom external object type](#Section_03882002995a42f4997ce9d1dce888b1) 433

[VbaProjectStgUncompressedAtom external object type](#Section_ca12ee80d3a6424f82ce56a927669fed) 432

[Vendor-extensible fields](#section_1ef456b0e553440eb5d700f8b41662d8) 28

[Versioning](#section_c5d23a1cc621410ca0dd9933924f91ee) 28

View info type

[GridSpacing10Atom](#Section_e40174dc118f46c38c6198f63d426f44) 125

[GuideAtom](#Section_b5cc09d93f104eabb204ba88552dc1ec) 133

[NormalViewSetInfoAtom](#Section_b906d23a45d244a2b486545f21676ecd) 126

[NormalViewSetInfoContainer](#Section_5b7a13338de24c50a83838c389db3147) 125

[NotesTextViewInfoContainer](#Section_caacc34d988c4cbc99f7a4bdf808e723) 128

[NotesViewInfoContainer](#Section_96636c7591464d128099f0f50e382b71) 134

[NoZoomViewInfoAtom](#Section_377e8d7886934fecb31caa890909f4b3) 130

[OutlineViewInfoContainer](#Section_39073741a8dd47bdb94f857a2850ff62) 130

[SlideViewInfoAtom](#Section_bb7145715b154cd8a28c4437c4e1ad15) 133

[SlideViewInfoContainer](#Section_1a865dda625a4d3f9ab4fc7e647dd7c3) 132

[SlideViewInfoInstance](#Section_b2b53b7fd4c145a9948e3e0e7d168164) 132

[SorterViewInfoContainer](#Section_7184066996c54d7a9a9aeb5184c1626e) 135

[ZoomViewInfoAtom](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) 128

[ViewTypeEnum enumeration](#Section_cba11b78dfcd451e81cdbf080175e314) 490

[VisualElementAtom animation type](#Section_7b47864505d44a2eb21ebbf183e3f73d) 281

[VisualPageAtom animation type](#Section_4ecd8e2993c14393a31c80a8ccd529ce) 281

[VisualShapeAtom animation type](#Section_a274411d0faa4993b202a7510a93c881) 283

[VisualShapeChartElementAtom animation type](#Section_660780f345414850bae696b8ffa7d645) 283

[VisualShapeGeneralAtom animation type](#Section_e3f4be5088fd43fdb68f82f2743e92ea) 284

[VisualShapeOrSoundAtom animation type](#Section_980f64aba892406bb4696299033ade3c) 282

[VisualSoundAtom animation type](#Section_8cf2f3366e294368b5f1a21e8779f3af) 282

W

[WebFrameColorsEnum enumeration](#Section_33f64cba48d14482a9fede9f32d0b8d6) 491

[WebOutputEnum enumeration](#Section_3b7b79c44daf45549c6fd1fdaf72c323) 491

[WideColorStruct structure](#Section_c03b38b48b9c4c5f914ce9819b228619) 458

Z

[ZoomViewInfoAtom view info type](#Section_ff6ea2f4fe0c4a42bdfb2e402919747c) 128