**[MS-VSDX]:**

**Visio Graphics Service VSDX File Format**

Intellectual Property Rights Notice for Open Specifications Documentation

* **Technical Documentation.** Microsoft publishes Open Specifications documentation (“this documentation”) for protocols, file formats, data portability, computer languages, and standards support. Additionally, overview documents cover inter-protocol relationships and interactions.
* **Copyrights**. This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you can make copies of it in order to develop implementations of the technologies that are described in this documentation and can distribute portions of it in your implementations that use these technologies or in your documentation as necessary to properly document the implementation. You can also distribute in your implementation, with or without modification, any schemas, IDLs, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications documentation.
* **No Trade Secrets**. Microsoft does not claim any trade secret rights in this documentation.
* **Patents**. Microsoft has patents that might cover your implementations of the technologies described in the Open Specifications documentation. Neither this notice nor Microsoft's delivery of this documentation grants any licenses under those patents or any other Microsoft patents. However, a given Open Specifications document might be covered by the Microsoft [Open Specifications Promise](https://go.microsoft.com/fwlink/?LinkId=214445) or the [Microsoft Community Promise](https://go.microsoft.com/fwlink/?LinkId=214448). If you would prefer a written license, or if the technologies described in this documentation are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting [iplg@microsoft.com](mailto:iplg@microsoft.com).
* **License Programs**. To see all of the protocols in scope under a specific license program and the associated patents, visit the [Patent Map](https://aka.ms/AA9ufj8).
* **Trademarks**. The names of companies and products contained in this documentation might be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit [www.microsoft.com/trademarks](https://www.microsoft.com/trademarks).
* **Fictitious Names**. The example companies, organizations, products, domain names, email addresses, logos, people, places, and events that are depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

**Reservation of Rights**. All other rights are reserved, and this notice does not grant any rights other than as specifically described above, whether by implication, estoppel, or otherwise.

**Tools**. The Open Specifications documentation does not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments, you are free to take advantage of them. Certain Open Specifications documents are intended for use in conjunction with publicly available standards specifications and network programming art and, as such, assume that the reader either is familiar with the aforementioned material or has immediate access to it.

**Support.** For questions and support, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

**Preliminary Documentation.** This particular Open Specifications document provides documentation for past and current releases and/or for the pre-release version of this technology. This document provides final documentation for past and current releases and preliminary documentation, as applicable and specifically noted in this document, for the pre-release version. Microsoft will release final documentation in connection with the commercial release of the updated or new version of this technology. Because this documentation might change between the pre-release version and the final version of this technology, there are risks in relying on this preliminary documentation. To the extent that you incur additional development obligations or any other costs as a result of relying on this preliminary documentation, you do so at your own risk.

**Revision Summary**

| Date | Revision History | Revision Class | Comments |
| --- | --- | --- | --- |
| 1/20/2012 | 0.1 | New | Released new document. |
| 4/11/2012 | 0.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/16/2012 | 0.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 9/12/2012 | 0.1 | None | No changes to the meaning, language, or formatting of the technical content. |
| 10/8/2012 | 1.0 | Major | Significantly changed the technical content. |
| 2/11/2013 | 2.0 | Major | Significantly changed the technical content. |
| 7/30/2013 | 2.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 11/18/2013 | 2.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 2/10/2014 | 2.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 4/30/2014 | 2.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 7/31/2014 | 2.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 10/30/2014 | 2.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 3/16/2015 | 3.0 | Major | Significantly changed the technical content. |
| 9/4/2015 | 4.0 | Major | Significantly changed the technical content. |
| 7/15/2016 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 9/14/2016 | 4.0 | None | No changes to the meaning, language, or formatting of the technical content. |
| 10/17/2016 | 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 | 5.0 | Major | Significantly changed the technical content. |
| 12/12/2017 | 5.1 | Minor | Clarified the meaning of the technical content. |
| 7/24/2018 | 6.0 | Major | Significantly changed the technical content. |
| 10/1/2018 | 7.0 | Major | Significantly changed the technical content. |
| 4/22/2021 | 8.0 | Major | Significantly changed the technical content. |

Table of Contents

[1 Introduction 23](#_Toc69360038)

[1.1 Glossary 23](#_Toc69360039)

[1.2 References 26](#_Toc69360040)

[1.2.1 Normative References 26](#_Toc69360041)

[1.2.2 Informative References 28](#_Toc69360042)

[1.3 Overview 28](#_Toc69360043)

[1.4 Relationship to Protocols and Other Structures 28](#_Toc69360044)

[1.5 Applicability Statement 28](#_Toc69360045)

[1.6 Versioning and Localization 29](#_Toc69360046)

[1.7 Vendor-Extensible Fields 29](#_Toc69360047)

[2 Structures 30](#_Toc69360048)

[2.1 File Structure Overview 30](#_Toc69360049)

[2.1.1 Package 30](#_Toc69360050)

[2.1.2 Parts 30](#_Toc69360051)

[2.1.3 Relationship 30](#_Toc69360052)

[2.1.4 Markup Compatibility 31](#_Toc69360053)

[2.2 Conceptual Overview 31](#_Toc69360054)

[2.2.1 Web Drawing 31](#_Toc69360055)

[2.2.2 Drawing Page 31](#_Toc69360056)

[2.2.2.1 Page Identification 31](#_Toc69360057)

[2.2.2.2 Coordinate System 32](#_Toc69360058)

[2.2.2.3 Drawing Scale 32](#_Toc69360059)

[2.2.2.4 Foreground Page 33](#_Toc69360060)

[2.2.2.5 Background Page 33](#_Toc69360061)

[2.2.2.6 Layer 33](#_Toc69360062)

[2.2.3 Shape 34](#_Toc69360063)

[2.2.3.1 Shape Identification 34](#_Toc69360064)

[2.2.3.1.1 One-Dimensional Shape 34](#_Toc69360065)

[2.2.3.1.2 Two-Dimensional Shape 34](#_Toc69360066)

[2.2.3.2 Geometry Visualization 34](#_Toc69360067)

[2.2.3.2.1 Coordinate System 34](#_Toc69360068)

[2.2.3.2.1.1 Relative Coordinate System 35](#_Toc69360069)

[2.2.3.2.2 Geometry Path 35](#_Toc69360070)

[2.2.3.2.3 Display Order 35](#_Toc69360071)

[2.2.3.3 Shape Hierarchy 36](#_Toc69360072)

[2.2.3.3.1 Parent 36](#_Toc69360073)

[2.2.3.3.2 Top-Level Shape 36](#_Toc69360074)

[2.2.3.3.3 Subshape 36](#_Toc69360075)

[2.2.3.4 Shape Selection 36](#_Toc69360076)

[2.2.3.5 Shape Hyperlinks 37](#_Toc69360077)

[2.2.3.6 Shape Data 37](#_Toc69360078)

[2.2.4 Master 37](#_Toc69360079)

[2.2.4.1 Master Identification 37](#_Toc69360080)

[2.2.5 Sheet 37](#_Toc69360081)

[2.2.5.1 Sheet Identification 38](#_Toc69360082)

[2.2.5.2 Sheet Types 38](#_Toc69360083)

[2.2.5.2.1 Document Sheet 38](#_Toc69360084)

[2.2.5.2.2 Page Sheet 38](#_Toc69360085)

[2.2.5.2.3 Shape Sheet 38](#_Toc69360086)

[2.2.5.2.4 Style Sheet 38](#_Toc69360087)

[2.2.5.2.4.1 Root Style Sheet 39](#_Toc69360088)

[2.2.5.3 Sheet Structures 39](#_Toc69360089)

[2.2.5.3.1 Section 39](#_Toc69360090)

[2.2.5.3.2 Row 39](#_Toc69360091)

[2.2.5.3.3 Cell 39](#_Toc69360092)

[2.2.5.3.3.1 Cell Default Values 39](#_Toc69360093)

[2.2.5.4 Inheritance 42](#_Toc69360094)

[2.2.5.4.1 Master-to-Shape Inheritance 42](#_Toc69360095)

[2.2.5.4.2 Style-to-Shape Inheritance 42](#_Toc69360096)

[2.2.5.4.3 Style-to-Master Inheritance 43](#_Toc69360097)

[2.2.5.4.4 Style-to-Style Inheritance 43](#_Toc69360098)

[2.2.5.4.5 Theme Inheritance 43](#_Toc69360099)

[2.2.5.4.6 Local Properties 44](#_Toc69360100)

[2.2.5.5 Sheet Extensibility 44](#_Toc69360101)

[2.2.6 Image 44](#_Toc69360102)

[2.2.6.1 Fallback Image 45](#_Toc69360103)

[2.2.7 Format 45](#_Toc69360104)

[2.2.7.1 Fill Properties 45](#_Toc69360105)

[2.2.7.2 Line Properties 46](#_Toc69360106)

[2.2.7.3 Effect Properties 46](#_Toc69360107)

[2.2.7.3.1 Shadow Effect Set 46](#_Toc69360108)

[2.2.7.3.1.1 Shadow Distance 47](#_Toc69360109)

[2.2.7.3.1.2 Page Default Shadow 47](#_Toc69360110)

[2.2.7.3.2 Bevel Effect Set 47](#_Toc69360111)

[2.2.7.3.3 Glow Effect Set 47](#_Toc69360112)

[2.2.7.3.4 Reflection Effect Set 48](#_Toc69360113)

[2.2.7.3.5 Soft Edges Effect Set 48](#_Toc69360114)

[2.2.7.3.6 Sketch Effect Set 48](#_Toc69360115)

[2.2.7.3.7 3D Rotation Effect Set 48](#_Toc69360116)

[2.2.7.4 Dynamic Theme 49](#_Toc69360117)

[2.2.7.4.1 Dynamic Theme Components 49](#_Toc69360118)

[2.2.7.4.2 Dynamic Theme Identification 52](#_Toc69360119)

[2.2.7.4.3 Quick Style Slices 53](#_Toc69360120)

[2.2.7.4.4 Quick Style Identification 54](#_Toc69360121)

[2.2.7.4.5 Dynamic Theme Variants 55](#_Toc69360122)

[2.2.7.4.6 Dynamic Theme Variants Identification 56](#_Toc69360123)

[2.2.7.4.7 Dynamic Theme Functions 57](#_Toc69360124)

[2.2.7.4.8 Custom Dynamic Theme Color Scheme 57](#_Toc69360125)

[2.2.7.4.9 Connector 58](#_Toc69360126)

[2.2.7.4.10 Embellishment and Multiformat 58](#_Toc69360127)

[2.2.7.5 Fixed Theme 58](#_Toc69360128)

[2.2.7.5.1 Custom Fixed Color and Effect Schemes 59](#_Toc69360129)

[2.2.7.6 Color Table 59](#_Toc69360130)

[2.2.7.7 Font Table 60](#_Toc69360131)

[2.2.7.8 Custom Pattern 61](#_Toc69360132)

[2.2.7.9 Data Formatting 61](#_Toc69360133)

[2.2.7.9.1 Text Field Data Formatting 61](#_Toc69360134)

[2.2.7.9.2 Shape Data Formatting 62](#_Toc69360135)

[2.2.8 Text 62](#_Toc69360136)

[2.2.8.1 Character Properties 62](#_Toc69360137)

[2.2.8.2 Paragraph Properties 63](#_Toc69360138)

[2.2.8.3 Tabs Properties 63](#_Toc69360139)

[2.2.8.4 Text Fields 63](#_Toc69360140)

[2.2.8.5 Text Block 63](#_Toc69360141)

[2.2.8.5.1 Text Block Coordinate System 64](#_Toc69360142)

[2.2.9 Comments 65](#_Toc69360143)

[2.2.10 Data Connectivity and Refresh 65](#_Toc69360144)

[2.2.10.1 Data Connections 65](#_Toc69360145)

[2.2.10.2 Recordset 66](#_Toc69360146)

[2.2.10.2.1 Data Binding 66](#_Toc69360147)

[2.2.10.3 Recordset Refresh 67](#_Toc69360148)

[2.2.10.4 Recordset Row Addressing 67](#_Toc69360149)

[2.2.11 Diagram Update 67](#_Toc69360150)

[2.2.11.1 Update Triggers 68](#_Toc69360151)

[2.2.11.2 Formulas 68](#_Toc69360152)

[2.2.11.2.1 Formula Expression 68](#_Toc69360153)

[2.2.11.2.2 Parse Tokens 68](#_Toc69360154)

[2.2.11.2.2.1 Function Tokens 68](#_Toc69360155)

[2.2.11.2.2.2 Operand Tokens 68](#_Toc69360156)

[2.2.11.2.2.2.1 String Values 69](#_Toc69360157)

[2.2.11.2.2.2.2 Numeric Values 70](#_Toc69360158)

[2.2.11.2.2.2.3 Boolean Values 70](#_Toc69360159)

[2.2.11.2.2.2.4 Currency Values 70](#_Toc69360160)

[2.2.11.2.2.2.5 Color Values 70](#_Toc69360161)

[2.2.11.2.2.2.6 Date Values 70](#_Toc69360162)

[2.2.11.2.2.2.7 Geometry Function Values 71](#_Toc69360163)

[2.2.11.2.2.2.8 Error Values 71](#_Toc69360164)

[2.2.11.2.2.3 Reference Tokens 71](#_Toc69360165)

[2.2.11.2.3 Formula Evaluation 71](#_Toc69360166)

[2.2.11.2.4 Reference Context 71](#_Toc69360167)

[2.2.11.3 Unit Number 72](#_Toc69360168)

[2.2.11.3.1 One-dimensional Unit Number 72](#_Toc69360169)

[2.2.11.3.2 Multidimensional Unit Number 73](#_Toc69360170)

[2.3 Parts 73](#_Toc69360171)

[2.3.1 Part Enumeration 73](#_Toc69360172)

[2.3.2 Shared XML Parts and Schema 74](#_Toc69360173)

[2.3.2.1 App XML Part 74](#_Toc69360174)

[2.3.2.2 ContentType XML Part 74](#_Toc69360175)

[2.3.2.3 Core XML Part 74](#_Toc69360176)

[2.3.2.4 Custom XML Part 75](#_Toc69360177)

[2.3.2.5 Rels XML Part 75](#_Toc69360178)

[2.3.3 Visio Parts 75](#_Toc69360179)

[2.3.3.1 Comments XML Part 75](#_Toc69360180)

[2.3.3.2 Connections XML Part 76](#_Toc69360181)

[2.3.3.3 Document XML Part 76](#_Toc69360182)

[2.3.3.4 Extensions XML Part 76](#_Toc69360183)

[2.3.3.5 Image Part 77](#_Toc69360184)

[2.3.3.6 Master XML Part 77](#_Toc69360185)

[2.3.3.7 Masters XML Part 78](#_Toc69360186)

[2.3.3.8 Page XML Part 78](#_Toc69360187)

[2.3.3.9 Pages XML Part 78](#_Toc69360188)

[2.3.3.10 Recordsets XML Part 79](#_Toc69360189)

[2.3.3.11 Theme XML Part 79](#_Toc69360190)

[2.3.4 Visio XML Schema 79](#_Toc69360191)

[2.3.4.1 Simple Types 79](#_Toc69360192)

[2.3.4.2 Complex Types 79](#_Toc69360193)

[2.3.4.2.1 AttachedToolbars\_Type 79](#_Toc69360194)

[2.3.4.2.2 AuthorEntry\_Type 80](#_Toc69360195)

[2.3.4.2.3 AuthorList\_Type 80](#_Toc69360196)

[2.3.4.2.4 AutoLinkComparison\_Type 81](#_Toc69360197)

[2.3.4.2.5 Cell\_Type 81](#_Toc69360198)

[2.3.4.2.6 CellDef\_Type 84](#_Toc69360199)

[2.3.4.2.7 ColorEntry\_Type 85](#_Toc69360200)

[2.3.4.2.8 Colors\_Type 85](#_Toc69360201)

[2.3.4.2.9 CommentEntry\_Type 86](#_Toc69360202)

[2.3.4.2.10 CommentList\_Type 87](#_Toc69360203)

[2.3.4.2.11 Comments\_Type 87](#_Toc69360204)

[2.3.4.2.12 Connect\_Type 87](#_Toc69360205)

[2.3.4.2.13 Connects\_Type 88](#_Toc69360206)

[2.3.4.2.14 cp\_Type 88](#_Toc69360207)

[2.3.4.2.15 CT\_FmtSchemeEx 89](#_Toc69360208)

[2.3.4.2.16 CT\_FontProps 89](#_Toc69360209)

[2.3.4.2.17 CT\_FontStyles 90](#_Toc69360210)

[2.3.4.2.18 CT\_FontStylesGroup 90](#_Toc69360211)

[2.3.4.2.19 CT\_LineEx 91](#_Toc69360212)

[2.3.4.2.20 CT\_LineStyle 92](#_Toc69360213)

[2.3.4.2.21 CT\_LineStyles 92](#_Toc69360214)

[2.3.4.2.22 CT\_OfficeStyleSheet 92](#_Toc69360215)

[2.3.4.2.23 CT\_SchemeID 95](#_Toc69360216)

[2.3.4.2.24 CT\_SchemeLineStyles 96](#_Toc69360217)

[2.3.4.2.25 CT\_Sketch 96](#_Toc69360218)

[2.3.4.2.26 CT\_ThemeScheme 97](#_Toc69360219)

[2.3.4.2.27 CT\_VarClrScheme 97](#_Toc69360220)

[2.3.4.2.28 CT\_VariationClrSchemeLst 98](#_Toc69360221)

[2.3.4.2.29 CT\_VariationStyle 99](#_Toc69360222)

[2.3.4.2.30 CT\_VariationStyleScheme 99](#_Toc69360223)

[2.3.4.2.31 CT\_VariationStyleSchemeLst 100](#_Toc69360224)

[2.3.4.2.32 CustomMenusFile\_Type 100](#_Toc69360225)

[2.3.4.2.33 CustomToolbarsFile\_Type 100](#_Toc69360226)

[2.3.4.2.34 Data\_Type 101](#_Toc69360227)

[2.3.4.2.35 DataColumn\_Type 101](#_Toc69360228)

[2.3.4.2.36 DataColumns\_Type 102](#_Toc69360229)

[2.3.4.2.37 DataConnection\_Type 103](#_Toc69360230)

[2.3.4.2.38 DataConnections\_Type 104](#_Toc69360231)

[2.3.4.2.39 DataRecordSet\_Type 105](#_Toc69360232)

[2.3.4.2.40 DataRecordSets\_Type 107](#_Toc69360233)

[2.3.4.2.41 DocumentSettings\_Type 107](#_Toc69360234)

[2.3.4.2.42 DocumentSheet\_Type 109](#_Toc69360235)

[2.3.4.2.43 DynamicGridEnabled\_Type 110](#_Toc69360236)

[2.3.4.2.44 Extensions\_Type 110](#_Toc69360237)

[2.3.4.2.45 FaceName\_Type 111](#_Toc69360238)

[2.3.4.2.46 FaceNames\_Type 111](#_Toc69360239)

[2.3.4.2.47 fld\_Type 112](#_Toc69360240)

[2.3.4.2.48 FooterCenter\_Type 112](#_Toc69360241)

[2.3.4.2.49 FooterLeft\_Type 112](#_Toc69360242)

[2.3.4.2.50 FooterMargin\_Type 113](#_Toc69360243)

[2.3.4.2.51 FooterRight\_Type 113](#_Toc69360244)

[2.3.4.2.52 ForeignData\_Type 113](#_Toc69360245)

[2.3.4.2.53 FunctionDef\_Type 115](#_Toc69360246)

[2.3.4.2.54 GlueSettings\_Type 115](#_Toc69360247)

[2.3.4.2.55 HeaderCenter\_Type 115](#_Toc69360248)

[2.3.4.2.56 HeaderFooter\_Type 116](#_Toc69360249)

[2.3.4.2.57 HeaderFooterFont\_Type 116](#_Toc69360250)

[2.3.4.2.58 HeaderLeft\_Type 118](#_Toc69360251)

[2.3.4.2.59 HeaderMargin\_Type 118](#_Toc69360252)

[2.3.4.2.60 HeaderRight\_Type 118](#_Toc69360253)

[2.3.4.2.61 Icon\_Type 119](#_Toc69360254)

[2.3.4.2.62 Master\_Type 119](#_Toc69360255)

[2.3.4.2.63 Masters\_Type 121](#_Toc69360256)

[2.3.4.2.64 MasterShortcut\_Type 121](#_Toc69360257)

[2.3.4.2.65 Page\_Type 122](#_Toc69360258)

[2.3.4.2.66 PageContents\_Type 123](#_Toc69360259)

[2.3.4.2.67 Pages\_Type 124](#_Toc69360260)

[2.3.4.2.68 PageSheet\_Type 124](#_Toc69360261)

[2.3.4.2.69 pp\_Type 125](#_Toc69360262)

[2.3.4.2.70 PrimaryKey\_Type 125](#_Toc69360263)

[2.3.4.2.71 ProtectBkgnds\_Type 126](#_Toc69360264)

[2.3.4.2.72 ProtectMasters\_Type 126](#_Toc69360265)

[2.3.4.2.73 ProtectShapes\_Type 126](#_Toc69360266)

[2.3.4.2.74 ProtectStyles\_Type 127](#_Toc69360267)

[2.3.4.2.75 PublishedPage\_Type 127](#_Toc69360268)

[2.3.4.2.76 PublishSettings\_Type 127](#_Toc69360269)

[2.3.4.2.77 RefBy\_Type 128](#_Toc69360270)

[2.3.4.2.78 RefreshableData\_Type 128](#_Toc69360271)

[2.3.4.2.79 RefreshConflict\_Type 129](#_Toc69360272)

[2.3.4.2.80 Rel\_Type 129](#_Toc69360273)

[2.3.4.2.81 Row\_Type 130](#_Toc69360274)

[2.3.4.2.82 RowDef\_Type 131](#_Toc69360275)

[2.3.4.2.83 RowKeyValue\_Type 131](#_Toc69360276)

[2.3.4.2.84 RowMap\_Type 131](#_Toc69360277)

[2.3.4.2.85 Section\_Type 132](#_Toc69360278)

[2.3.4.2.86 SectionDef\_Type 133](#_Toc69360279)

[2.3.4.2.87 Shapes\_Type 134](#_Toc69360280)

[2.3.4.2.88 ShapeSheet\_Type 134](#_Toc69360281)

[2.3.4.2.89 Sheet\_Type 136](#_Toc69360282)

[2.3.4.2.90 SnapAngle\_Type 137](#_Toc69360283)

[2.3.4.2.91 SnapAngles\_Type 137](#_Toc69360284)

[2.3.4.2.92 SnapExtensions\_Type 138](#_Toc69360285)

[2.3.4.2.93 SnapSettings\_Type 138](#_Toc69360286)

[2.3.4.2.94 StyleSheet\_Type 138](#_Toc69360287)

[2.3.4.2.95 StyleSheets\_Type 139](#_Toc69360288)

[2.3.4.2.96 Text\_Type 140](#_Toc69360289)

[2.3.4.2.97 tp\_Type 140](#_Toc69360290)

[2.3.4.2.98 VisioDocument\_Type 140](#_Toc69360291)

[2.3.4.2.99 EventList\_Type 141](#_Toc69360292)

[2.3.4.2.100 EventItem\_Type 142](#_Toc69360293)

[2.3.4.2.101 Trigger\_Type 142](#_Toc69360294)

[2.3.4.3 Elements 143](#_Toc69360295)

[2.3.4.3.1 VisioDocument 143](#_Toc69360296)

[2.3.4.3.2 Masters 143](#_Toc69360297)

[2.3.4.3.3 MasterContents 143](#_Toc69360298)

[2.3.4.3.4 Pages 143](#_Toc69360299)

[2.3.4.3.5 PageContents 144](#_Toc69360300)

[2.3.4.3.6 DataConnections 144](#_Toc69360301)

[2.3.4.3.7 DataRecordSets 144](#_Toc69360302)

[2.3.4.3.8 Comments 144](#_Toc69360303)

[2.3.4.3.9 Theme 144](#_Toc69360304)

[2.3.4.3.10 Extensions 145](#_Toc69360305)

[2.3.4.4 Attributes 145](#_Toc69360306)

[2.3.5 Markup Compatibility Schema 145](#_Toc69360307)

[2.3.5.1 Compatibility-Rule Attributes 145](#_Toc69360308)

[2.3.5.2 Alternate-Content Elements 145](#_Toc69360309)

[2.4 ShapeSheet Properties 146](#_Toc69360310)

[2.4.1 Sections 146](#_Toc69360311)

[2.4.1.1 Actions 146](#_Toc69360312)

[2.4.1.2 ActionTag 146](#_Toc69360313)

[2.4.1.3 Character 146](#_Toc69360314)

[2.4.1.4 Connection 146](#_Toc69360315)

[2.4.1.5 Control 146](#_Toc69360316)

[2.4.1.6 Field 146](#_Toc69360317)

[2.4.1.7 FillGradient 147](#_Toc69360318)

[2.4.1.8 Geometry 147](#_Toc69360319)

[2.4.1.9 Hyperlink 147](#_Toc69360320)

[2.4.1.10 Layer 147](#_Toc69360321)

[2.4.1.11 LineGradient 147](#_Toc69360322)

[2.4.1.12 Paragraph 147](#_Toc69360323)

[2.4.1.13 Property 147](#_Toc69360324)

[2.4.1.14 Reviewer 147](#_Toc69360325)

[2.4.1.15 Scratch 147](#_Toc69360326)

[2.4.1.16 Tabs 147](#_Toc69360327)

[2.4.1.17 User 148](#_Toc69360328)

[2.4.2 GeometryRowTypes 148](#_Toc69360329)

[2.4.2.1 ArcTo 148](#_Toc69360330)

[2.4.2.2 Ellipse 148](#_Toc69360331)

[2.4.2.3 EllipticalArcTo 149](#_Toc69360332)

[2.4.2.4 InfiniteLine 149](#_Toc69360333)

[2.4.2.5 LineTo 149](#_Toc69360334)

[2.4.2.6 MoveTo 150](#_Toc69360335)

[2.4.2.7 NURBSTo 150](#_Toc69360336)

[2.4.2.8 PolylineTo 150](#_Toc69360337)

[2.4.2.9 RelCubBezTo 151](#_Toc69360338)

[2.4.2.10 RelEllipticalArcTo 151](#_Toc69360339)

[2.4.2.11 RelLineTo 151](#_Toc69360340)

[2.4.2.12 RelMoveTo 152](#_Toc69360341)

[2.4.2.13 RelQuadBezTo 152](#_Toc69360342)

[2.4.2.14 SplineKnot 152](#_Toc69360343)

[2.4.2.15 SplineStart 153](#_Toc69360344)

[2.4.3 UserRowNames 153](#_Toc69360345)

[2.4.3.1 msvShapeCategories 153](#_Toc69360346)

[2.4.3.2 msvThemeAccentColor 153](#_Toc69360347)

[2.4.3.3 msvThemeDarkColor 154](#_Toc69360348)

[2.4.3.4 msvThemeLightColor 154](#_Toc69360349)

[2.4.3.5 msvThemeAccentColor6 154](#_Toc69360350)

[2.4.3.6 msvThemeAccentColor2 154](#_Toc69360351)

[2.4.3.7 msvThemeAccentColor3 154](#_Toc69360352)

[2.4.3.8 msvThemeAccentColor4 154](#_Toc69360353)

[2.4.3.9 msvThemeAccentColor5 154](#_Toc69360354)

[2.4.3.10 msvThemeAsianFont 155](#_Toc69360355)

[2.4.3.11 msvThemeBackgroundColor 155](#_Toc69360356)

[2.4.3.12 msvThemeColors 155](#_Toc69360357)

[2.4.3.13 msvThemeComplexFont 155](#_Toc69360358)

[2.4.3.14 msvThemeConnectorBegin 155](#_Toc69360359)

[2.4.3.15 msvThemeConnectorBeginSize 155](#_Toc69360360)

[2.4.3.16 msvThemeConnectorColor 156](#_Toc69360361)

[2.4.3.17 msvThemeConnectorEnd 156](#_Toc69360362)

[2.4.3.18 msvThemeConnectorEnd2 156](#_Toc69360363)

[2.4.3.19 msvThemeConnectorEndSize 156](#_Toc69360364)

[2.4.3.20 msvThemeConnectorPattern 156](#_Toc69360365)

[2.4.3.21 msvThemeConnectorRounding 156](#_Toc69360366)

[2.4.3.22 msvThemeConnectorTransparency 156](#_Toc69360367)

[2.4.3.23 msvThemeConnectorWeight 157](#_Toc69360368)

[2.4.3.24 msvThemeEffects 157](#_Toc69360369)

[2.4.3.25 msvThemeFillColor 157](#_Toc69360370)

[2.4.3.26 msvThemeFillColor2 157](#_Toc69360371)

[2.4.3.27 msvThemeFillPattern 157](#_Toc69360372)

[2.4.3.28 msvThemeFillTransparency 157](#_Toc69360373)

[2.4.3.29 msvThemeLatinFont 157](#_Toc69360374)

[2.4.3.30 msvThemeLineColor 158](#_Toc69360375)

[2.4.3.31 msvThemeLinePattern 158](#_Toc69360376)

[2.4.3.32 msvThemeLineRounding 158](#_Toc69360377)

[2.4.3.33 msvThemeLineTransparency 158](#_Toc69360378)

[2.4.3.34 msvThemeLineWeight 158](#_Toc69360379)

[2.4.3.35 msvThemeShadowColor 158](#_Toc69360380)

[2.4.3.36 msvThemeShadowDirection 158](#_Toc69360381)

[2.4.3.37 msvThemeShadowMagnification 159](#_Toc69360382)

[2.4.3.38 msvThemeShadowPattern 159](#_Toc69360383)

[2.4.3.39 msvThemeShadowStyle 159](#_Toc69360384)

[2.4.3.40 msvThemeShadowTransparency 159](#_Toc69360385)

[2.4.3.41 msvThemeShadowXOffset 159](#_Toc69360386)

[2.4.3.42 msvThemeShadowYOffset 159](#_Toc69360387)

[2.4.3.43 msvThemeTextColor 159](#_Toc69360388)

[2.4.3.44 visUSEType 160](#_Toc69360389)

[2.4.4 Cells 160](#_Toc69360390)

[2.4.4.1 A 160](#_Toc69360391)

[2.4.4.2 Action 160](#_Toc69360392)

[2.4.4.3 Active 161](#_Toc69360393)

[2.4.4.4 AddMarkup 161](#_Toc69360394)

[2.4.4.5 Address 161](#_Toc69360395)

[2.4.4.6 AlignBottom 161](#_Toc69360396)

[2.4.4.7 AlignCenter 161](#_Toc69360397)

[2.4.4.8 AlignLeft 161](#_Toc69360398)

[2.4.4.9 Alignment 161](#_Toc69360399)

[2.4.4.10 AlignMiddle 162](#_Toc69360400)

[2.4.4.11 AlignRight 162](#_Toc69360401)

[2.4.4.12 AlignTop 162](#_Toc69360402)

[2.4.4.13 Angle 162](#_Toc69360403)

[2.4.4.14 AsianFont 162](#_Toc69360404)

[2.4.4.15 AutoGen 162](#_Toc69360405)

[2.4.4.16 AvenueSizeX 162](#_Toc69360406)

[2.4.4.17 AvenueSizeY 162](#_Toc69360407)

[2.4.4.18 AvoidPageBreaks 162](#_Toc69360408)

[2.4.4.19 B 163](#_Toc69360409)

[2.4.4.20 BeginArrow 163](#_Toc69360410)

[2.4.4.21 BeginArrowSize 165](#_Toc69360411)

[2.4.4.22 BeginGroup 166](#_Toc69360412)

[2.4.4.23 BeginX 166](#_Toc69360413)

[2.4.4.24 BeginY 166](#_Toc69360414)

[2.4.4.25 BegTrigger 166](#_Toc69360415)

[2.4.4.26 BevelBottomHeight 166](#_Toc69360416)

[2.4.4.27 BevelBottomType 166](#_Toc69360417)

[2.4.4.28 BevelBottomWidth 167](#_Toc69360418)

[2.4.4.29 BevelContourColor 167](#_Toc69360419)

[2.4.4.30 BevelContourSize 167](#_Toc69360420)

[2.4.4.31 BevelDepthColor 167](#_Toc69360421)

[2.4.4.32 BevelDepthSize 167](#_Toc69360422)

[2.4.4.33 BevelLightingAngle 167](#_Toc69360423)

[2.4.4.34 BevelLightingType 168](#_Toc69360424)

[2.4.4.35 BevelMaterialType 168](#_Toc69360425)

[2.4.4.36 BevelTopHeight 169](#_Toc69360426)

[2.4.4.37 BevelTopType 169](#_Toc69360427)

[2.4.4.38 BevelTopWidth 170](#_Toc69360428)

[2.4.4.39 BlockSizeX 170](#_Toc69360429)

[2.4.4.40 BlockSizeY 170](#_Toc69360430)

[2.4.4.41 Blur 170](#_Toc69360431)

[2.4.4.42 BottomMargin 170](#_Toc69360432)

[2.4.4.43 Brightness 170](#_Toc69360433)

[2.4.4.44 Bullet 171](#_Toc69360434)

[2.4.4.45 BulletFont 171](#_Toc69360435)

[2.4.4.46 BulletFontSize 171](#_Toc69360436)

[2.4.4.47 BulletStr 171](#_Toc69360437)

[2.4.4.48 ButtonFace 172](#_Toc69360438)

[2.4.4.49 C 172](#_Toc69360439)

[2.4.4.50 Calendar 172](#_Toc69360440)

[2.4.4.51 CanGlue 172](#_Toc69360441)

[2.4.4.52 Case 172](#_Toc69360442)

[2.4.4.53 CenterX 173](#_Toc69360443)

[2.4.4.54 CenterY 173](#_Toc69360444)

[2.4.4.55 Checked 173](#_Toc69360445)

[2.4.4.56 ClippingPath 173](#_Toc69360446)

[2.4.4.57 Color 173](#_Toc69360447)

[2.4.4.58 ColorSchemeIndex 174](#_Toc69360448)

[2.4.4.59 ColorTrans 174](#_Toc69360449)

[2.4.4.60 Comment 175](#_Toc69360450)

[2.4.4.61 ComplexScriptFont 175](#_Toc69360451)

[2.4.4.62 ComplexScriptSize 175](#_Toc69360452)

[2.4.4.63 CompoundType 175](#_Toc69360453)

[2.4.4.64 ConFixedCode 176](#_Toc69360454)

[2.4.4.65 ConLineJumpCode 176](#_Toc69360455)

[2.4.4.66 ConLineJumpDirX 176](#_Toc69360456)

[2.4.4.67 ConLineJumpDirY 176](#_Toc69360457)

[2.4.4.68 ConLineJumpStyle 176](#_Toc69360458)

[2.4.4.69 ConLineRouteExt 176](#_Toc69360459)

[2.4.4.70 ConnectorSchemeIndex 176](#_Toc69360460)

[2.4.4.71 Contrast 176](#_Toc69360461)

[2.4.4.72 Copyright 177](#_Toc69360462)

[2.4.4.73 CtrlAsInput 177](#_Toc69360463)

[2.4.4.74 CurrentIndex 177](#_Toc69360464)

[2.4.4.75 D 177](#_Toc69360465)

[2.4.4.76 DataLinked 177](#_Toc69360466)

[2.4.4.77 DblUnderline 177](#_Toc69360467)

[2.4.4.78 Default 177](#_Toc69360468)

[2.4.4.79 DefaultTabStop 178](#_Toc69360469)

[2.4.4.80 Denoise 178](#_Toc69360470)

[2.4.4.81 Description 178](#_Toc69360471)

[2.4.4.82 DirX 178](#_Toc69360472)

[2.4.4.83 DirY 178](#_Toc69360473)

[2.4.4.84 Disabled 178](#_Toc69360474)

[2.4.4.85 DisplayLevel 178](#_Toc69360475)

[2.4.4.86 DisplayMode 178](#_Toc69360476)

[2.4.4.87 DistanceFromGround 179](#_Toc69360477)

[2.4.4.88 DocLangID 179](#_Toc69360478)

[2.4.4.89 DocLockDuplicatePage 179](#_Toc69360479)

[2.4.4.90 DocLockReplace 179](#_Toc69360480)

[2.4.4.91 DontMoveChildren 179](#_Toc69360481)

[2.4.4.92 DoubleStrikethrough 179](#_Toc69360482)

[2.4.4.93 DrawingResizeType 180](#_Toc69360483)

[2.4.4.94 DrawingScale 180](#_Toc69360484)

[2.4.4.95 DrawingScaleType 180](#_Toc69360485)

[2.4.4.96 DrawingSizeType 180](#_Toc69360486)

[2.4.4.97 DropOnPageScale 181](#_Toc69360487)

[2.4.4.98 DynamicsOff 181](#_Toc69360488)

[2.4.4.99 DynFeedback 181](#_Toc69360489)

[2.4.4.100 E 181](#_Toc69360490)

[2.4.4.101 EffectSchemeIndex 181](#_Toc69360491)

[2.4.4.102 EmbellishmentIndex 181](#_Toc69360492)

[2.4.4.103 EnableFillProps 181](#_Toc69360493)

[2.4.4.104 EnableGrid 182](#_Toc69360494)

[2.4.4.105 EnableLineProps 182](#_Toc69360495)

[2.4.4.106 EnableTextProps 182](#_Toc69360496)

[2.4.4.107 EndArrow 182](#_Toc69360497)

[2.4.4.108 EndArrowSize 182](#_Toc69360498)

[2.4.4.109 EndTrigger 183](#_Toc69360499)

[2.4.4.110 EndX 183](#_Toc69360500)

[2.4.4.111 EndY 183](#_Toc69360501)

[2.4.4.112 EventDblClick 183](#_Toc69360502)

[2.4.4.113 EventDrop 183](#_Toc69360503)

[2.4.4.114 EventMultiDrop 183](#_Toc69360504)

[2.4.4.115 EventXFMod 183](#_Toc69360505)

[2.4.4.116 ExtraInfo 183](#_Toc69360506)

[2.4.4.117 FillBkgnd 184](#_Toc69360507)

[2.4.4.118 FillBkgndTrans 184](#_Toc69360508)

[2.4.4.119 FillForegnd 184](#_Toc69360509)

[2.4.4.120 FillForegndTrans 184](#_Toc69360510)

[2.4.4.121 FillGradientAngle 184](#_Toc69360511)

[2.4.4.122 FillGradientDir 184](#_Toc69360512)

[2.4.4.123 FillGradientEnabled 185](#_Toc69360513)

[2.4.4.124 FillPattern 185](#_Toc69360514)

[2.4.4.125 Flags 188](#_Toc69360515)

[2.4.4.126 FlipX 188](#_Toc69360516)

[2.4.4.127 FlipY 188](#_Toc69360517)

[2.4.4.128 FlyoutChild 188](#_Toc69360518)

[2.4.4.129 Font 188](#_Toc69360519)

[2.4.4.130 FontScale 188](#_Toc69360520)

[2.4.4.131 FontSchemeIndex 189](#_Toc69360521)

[2.4.4.132 Format 189](#_Toc69360522)

[2.4.4.133 Frame 189](#_Toc69360523)

[2.4.4.134 Gamma 189](#_Toc69360524)

[2.4.4.135 GlowColor 189](#_Toc69360525)

[2.4.4.136 GlowColorTrans 189](#_Toc69360526)

[2.4.4.137 GlowSize 189](#_Toc69360527)

[2.4.4.138 Glue 190](#_Toc69360528)

[2.4.4.139 GlueType 190](#_Toc69360529)

[2.4.4.140 GradientStopColor 190](#_Toc69360530)

[2.4.4.141 GradientStopColorTrans 190](#_Toc69360531)

[2.4.4.142 GradientStopPosition 190](#_Toc69360532)

[2.4.4.143 Height 190](#_Toc69360533)

[2.4.4.144 HelpTopic 190](#_Toc69360534)

[2.4.4.145 HideForApply 191](#_Toc69360535)

[2.4.4.146 HideText 191](#_Toc69360536)

[2.4.4.147 HorzAlign 191](#_Toc69360537)

[2.4.4.148 ImgHeight 191](#_Toc69360538)

[2.4.4.149 ImgOffsetX 191](#_Toc69360539)

[2.4.4.150 ImgOffsetY 191](#_Toc69360540)

[2.4.4.151 ImgWidth 191](#_Toc69360541)

[2.4.4.152 IndFirst 192](#_Toc69360542)

[2.4.4.153 IndLeft 192](#_Toc69360543)

[2.4.4.154 IndRight 192](#_Toc69360544)

[2.4.4.155 InhibitSnap 192](#_Toc69360545)

[2.4.4.156 Initials 192](#_Toc69360546)

[2.4.4.157 Invisible 192](#_Toc69360547)

[2.4.4.158 IsDropSource 192](#_Toc69360548)

[2.4.4.159 IsDropTarget 193](#_Toc69360549)

[2.4.4.160 IsSnapTarget 193](#_Toc69360550)

[2.4.4.161 IsTextEditTarget 193](#_Toc69360551)

[2.4.4.162 KeepTextFlat 193](#_Toc69360552)

[2.4.4.163 Label 193](#_Toc69360553)

[2.4.4.164 LangID 193](#_Toc69360554)

[2.4.4.165 LayerMember 193](#_Toc69360555)

[2.4.4.166 LeftMargin 193](#_Toc69360556)

[2.4.4.167 Letterspace 194](#_Toc69360557)

[2.4.4.168 LineAdjustFrom 194](#_Toc69360558)

[2.4.4.169 LineAdjustTo 194](#_Toc69360559)

[2.4.4.170 LineCap 194](#_Toc69360560)

[2.4.4.171 LineColor 194](#_Toc69360561)

[2.4.4.172 LineColorTrans 194](#_Toc69360562)

[2.4.4.173 LineGradientAngle 194](#_Toc69360563)

[2.4.4.174 LineGradientDir 195](#_Toc69360564)

[2.4.4.175 LineGradientEnabled 195](#_Toc69360565)

[2.4.4.176 LineJumpCode 195](#_Toc69360566)

[2.4.4.177 LineJumpFactorX 195](#_Toc69360567)

[2.4.4.178 LineJumpFactorY 196](#_Toc69360568)

[2.4.4.179 LineJumpStyle 196](#_Toc69360569)

[2.4.4.180 LinePattern 196](#_Toc69360570)

[2.4.4.181 LineRouteExt 197](#_Toc69360571)

[2.4.4.182 LineToLineX 197](#_Toc69360572)

[2.4.4.183 LineToLineY 197](#_Toc69360573)

[2.4.4.184 LineToNodeX 197](#_Toc69360574)

[2.4.4.185 LineToNodeY 198](#_Toc69360575)

[2.4.4.186 LineWeight 198](#_Toc69360576)

[2.4.4.187 LocalizeMerge 198](#_Toc69360577)

[2.4.4.188 Lock 198](#_Toc69360578)

[2.4.4.189 LockAspect 198](#_Toc69360579)

[2.4.4.190 LockBegin 198](#_Toc69360580)

[2.4.4.191 LockCalcWH 198](#_Toc69360581)

[2.4.4.192 LockCrop 198](#_Toc69360582)

[2.4.4.193 LockCustProp 198](#_Toc69360583)

[2.4.4.194 LockDelete 198](#_Toc69360584)

[2.4.4.195 LockEnd 199](#_Toc69360585)

[2.4.4.196 LockFormat 199](#_Toc69360586)

[2.4.4.197 LockFromGroupFormat 199](#_Toc69360587)

[2.4.4.198 LockGroup 199](#_Toc69360588)

[2.4.4.199 LockHeight 199](#_Toc69360589)

[2.4.4.200 LockMoveX 199](#_Toc69360590)

[2.4.4.201 LockMoveY 199](#_Toc69360591)

[2.4.4.202 LockPreview 199](#_Toc69360592)

[2.4.4.203 LockReplace 199](#_Toc69360593)

[2.4.4.204 LockRotate 199](#_Toc69360594)

[2.4.4.205 LockSelect 200](#_Toc69360595)

[2.4.4.206 LockTextEdit 200](#_Toc69360596)

[2.4.4.207 LockThemeColors 200](#_Toc69360597)

[2.4.4.208 LockThemeConnectors 200](#_Toc69360598)

[2.4.4.209 LockThemeEffects 200](#_Toc69360599)

[2.4.4.210 LockThemeFonts 200](#_Toc69360600)

[2.4.4.211 LockThemeIndex 200](#_Toc69360601)

[2.4.4.212 LockVariation 200](#_Toc69360602)

[2.4.4.213 LockVtxEdit 200](#_Toc69360603)

[2.4.4.214 LockWidth 200](#_Toc69360604)

[2.4.4.215 LocPinX 201](#_Toc69360605)

[2.4.4.216 LocPinY 201](#_Toc69360606)

[2.4.4.217 Menu 201](#_Toc69360607)

[2.4.4.218 Name 201](#_Toc69360608)

[2.4.4.219 NameUniv 201](#_Toc69360609)

[2.4.4.220 NewWindow 201](#_Toc69360610)

[2.4.4.221 NoAlignBox 201](#_Toc69360611)

[2.4.4.222 NoCoauth 201](#_Toc69360612)

[2.4.4.223 NoCtlHandles 201](#_Toc69360613)

[2.4.4.224 NoFill 201](#_Toc69360614)

[2.4.4.225 NoLine 202](#_Toc69360615)

[2.4.4.226 NoLiveDynamics 202](#_Toc69360616)

[2.4.4.227 NonPrinting 202](#_Toc69360617)

[2.4.4.228 NoObjHandles 202](#_Toc69360618)

[2.4.4.229 NoProofing 202](#_Toc69360619)

[2.4.4.230 NoQuickDrag 202](#_Toc69360620)

[2.4.4.231 NoShow 202](#_Toc69360621)

[2.4.4.232 NoSnap 202](#_Toc69360622)

[2.4.4.233 ObjectKind 202](#_Toc69360623)

[2.4.4.234 ObjType 203](#_Toc69360624)

[2.4.4.235 OnPage 203](#_Toc69360625)

[2.4.4.236 OutputFormat 203](#_Toc69360626)

[2.4.4.237 Overline 203](#_Toc69360627)

[2.4.4.238 PageBottomMargin 203](#_Toc69360628)

[2.4.4.239 PageHeight 203](#_Toc69360629)

[2.4.4.240 PageLeftMargin 203](#_Toc69360630)

[2.4.4.241 PageLineJumpDirX 203](#_Toc69360631)

[2.4.4.242 PageLineJumpDirY 204](#_Toc69360632)

[2.4.4.243 PageLockDuplicate 204](#_Toc69360633)

[2.4.4.244 PageLockReplace 204](#_Toc69360634)

[2.4.4.245 PageRightMargin 204](#_Toc69360635)

[2.4.4.246 PageScale 204](#_Toc69360636)

[2.4.4.247 PageShapeSplit 204](#_Toc69360637)

[2.4.4.248 PagesX 204](#_Toc69360638)

[2.4.4.249 PagesY 204](#_Toc69360639)

[2.4.4.250 PageTopMargin 204](#_Toc69360640)

[2.4.4.251 PageWidth 204](#_Toc69360641)

[2.4.4.252 PaperKind 205](#_Toc69360642)

[2.4.4.253 PaperSource 205](#_Toc69360643)

[2.4.4.254 Perspective 205](#_Toc69360644)

[2.4.4.255 PinX 205](#_Toc69360645)

[2.4.4.256 PinY 205](#_Toc69360646)

[2.4.4.257 PlaceDepth 205](#_Toc69360647)

[2.4.4.258 PlaceFlip 205](#_Toc69360648)

[2.4.4.259 PlaceStyle 205](#_Toc69360649)

[2.4.4.260 PlowCode 205](#_Toc69360650)

[2.4.4.261 Pos 206](#_Toc69360651)

[2.4.4.262 Position 206](#_Toc69360652)

[2.4.4.263 PreviewQuality 206](#_Toc69360653)

[2.4.4.264 PreviewScope 206](#_Toc69360654)

[2.4.4.265 Print 206](#_Toc69360655)

[2.4.4.266 PrintGrid 206](#_Toc69360656)

[2.4.4.267 PrintPageOrientation 206](#_Toc69360657)

[2.4.4.268 Prompt 207](#_Toc69360658)

[2.4.4.269 QuickStyleEffectsMatrix 207](#_Toc69360659)

[2.4.4.270 QuickStyleFillColor 208](#_Toc69360660)

[2.4.4.271 QuickStyleFillMatrix 209](#_Toc69360661)

[2.4.4.272 QuickStyleFontColor 210](#_Toc69360662)

[2.4.4.273 QuickStyleFontMatrix 210](#_Toc69360663)

[2.4.4.274 QuickStyleLineColor 211](#_Toc69360664)

[2.4.4.275 QuickStyleLineMatrix 211](#_Toc69360665)

[2.4.4.276 QuickStyleShadowColor 212](#_Toc69360666)

[2.4.4.277 QuickStyleType 212](#_Toc69360667)

[2.4.4.278 QuickStyleVariation 212](#_Toc69360668)

[2.4.4.279 ReadOnly 214](#_Toc69360669)

[2.4.4.280 ReflectionBlur 214](#_Toc69360670)

[2.4.4.281 ReflectionDist 214](#_Toc69360671)

[2.4.4.282 ReflectionSize 214](#_Toc69360672)

[2.4.4.283 ReflectionTrans 214](#_Toc69360673)

[2.4.4.284 Relationships 214](#_Toc69360674)

[2.4.4.285 ReplaceCopyCells 214](#_Toc69360675)

[2.4.4.286 ReplaceLockFormat 214](#_Toc69360676)

[2.4.4.287 ReplaceLockShapeData 215](#_Toc69360677)

[2.4.4.288 ReplaceLockText 215](#_Toc69360678)

[2.4.4.289 ResizeMode 215](#_Toc69360679)

[2.4.4.290 ResizePage 215](#_Toc69360680)

[2.4.4.291 ReviewerID 215](#_Toc69360681)

[2.4.4.292 RightMargin 215](#_Toc69360682)

[2.4.4.293 RotateGradientWithShape 215](#_Toc69360683)

[2.4.4.294 RotationType 215](#_Toc69360684)

[2.4.4.295 RotationXAngle 216](#_Toc69360685)

[2.4.4.296 RotationYAngle 216](#_Toc69360686)

[2.4.4.297 RotationZAngle 216](#_Toc69360687)

[2.4.4.298 Rounding 216](#_Toc69360688)

[2.4.4.299 RouteStyle 216](#_Toc69360689)

[2.4.4.300 ScaleX 216](#_Toc69360690)

[2.4.4.301 ScaleY 217](#_Toc69360691)

[2.4.4.302 SelectMode 217](#_Toc69360692)

[2.4.4.303 ShapeFixedCode 217](#_Toc69360693)

[2.4.4.304 ShapeKeywords 217](#_Toc69360694)

[2.4.4.305 ShapePermeablePlace 217](#_Toc69360695)

[2.4.4.306 ShapePermeableX 217](#_Toc69360696)

[2.4.4.307 ShapePermeableY 217](#_Toc69360697)

[2.4.4.308 ShapePlaceFlip 217](#_Toc69360698)

[2.4.4.309 ShapePlaceStyle 218](#_Toc69360699)

[2.4.4.310 ShapePlowCode 218](#_Toc69360700)

[2.4.4.311 ShapeRouteStyle 218](#_Toc69360701)

[2.4.4.312 ShapeShdwBlur 218](#_Toc69360702)

[2.4.4.313 ShapeShdwObliqueAngle 218](#_Toc69360703)

[2.4.4.314 ShapeShdwOffsetX 218](#_Toc69360704)

[2.4.4.315 ShapeShdwOffsetY 218](#_Toc69360705)

[2.4.4.316 ShapeShdwScaleFactor 218](#_Toc69360706)

[2.4.4.317 ShapeShdwShow 219](#_Toc69360707)

[2.4.4.318 ShapeShdwType 219](#_Toc69360708)

[2.4.4.319 ShapeSplit 219](#_Toc69360709)

[2.4.4.320 ShapeSplittable 219](#_Toc69360710)

[2.4.4.321 Sharpen 219](#_Toc69360711)

[2.4.4.322 ShdwForegnd 220](#_Toc69360712)

[2.4.4.323 ShdwForegndTrans 220](#_Toc69360713)

[2.4.4.324 ShdwObliqueAngle 220](#_Toc69360714)

[2.4.4.325 ShdwOffsetX 220](#_Toc69360715)

[2.4.4.326 ShdwOffsetY 220](#_Toc69360716)

[2.4.4.327 ShdwPattern 221](#_Toc69360717)

[2.4.4.328 ShdwScaleFactor 221](#_Toc69360718)

[2.4.4.329 ShdwType 221](#_Toc69360719)

[2.4.4.330 Size 221](#_Toc69360720)

[2.4.4.331 SketchAmount 221](#_Toc69360721)

[2.4.4.332 SketchEnabled 222](#_Toc69360722)

[2.4.4.333 SketchFillChange 222](#_Toc69360723)

[2.4.4.334 SketchLineChange 222](#_Toc69360724)

[2.4.4.335 SketchLineWeight 222](#_Toc69360725)

[2.4.4.336 SketchSeed 222](#_Toc69360726)

[2.4.4.337 Snap 222](#_Toc69360727)

[2.4.4.338 SoftEdgesSize 222](#_Toc69360728)

[2.4.4.339 SortKey 223](#_Toc69360729)

[2.4.4.340 SpAfter 223](#_Toc69360730)

[2.4.4.341 SpBefore 223](#_Toc69360731)

[2.4.4.342 SpLine 223](#_Toc69360732)

[2.4.4.343 Status 223](#_Toc69360733)

[2.4.4.344 Strikethru 223](#_Toc69360734)

[2.4.4.345 Style 223](#_Toc69360735)

[2.4.4.346 SubAddress 224](#_Toc69360736)

[2.4.4.347 TagName 224](#_Toc69360737)

[2.4.4.348 TextBkgnd 224](#_Toc69360738)

[2.4.4.349 TextBkgndTrans 224](#_Toc69360739)

[2.4.4.350 TextDirection 225](#_Toc69360740)

[2.4.4.351 TextPosAfterBullet 225](#_Toc69360741)

[2.4.4.352 TheData 225](#_Toc69360742)

[2.4.4.353 ThemeIndex 225](#_Toc69360743)

[2.4.4.354 TheText 225](#_Toc69360744)

[2.4.4.355 TopMargin 225](#_Toc69360745)

[2.4.4.356 Transparency 225](#_Toc69360746)

[2.4.4.357 TxtAngle 226](#_Toc69360747)

[2.4.4.358 TxtHeight 226](#_Toc69360748)

[2.4.4.359 TxtLocPinX 226](#_Toc69360749)

[2.4.4.360 TxtLocPinY 226](#_Toc69360750)

[2.4.4.361 TxtPinX 226](#_Toc69360751)

[2.4.4.362 TxtPinY 226](#_Toc69360752)

[2.4.4.363 TxtWidth 226](#_Toc69360753)

[2.4.4.364 Type 226](#_Toc69360754)

[2.4.4.365 UICat 227](#_Toc69360755)

[2.4.4.366 UICod 227](#_Toc69360756)

[2.4.4.367 UIFmt 227](#_Toc69360757)

[2.4.4.368 UIVisibility 227](#_Toc69360758)

[2.4.4.369 UpdateAlignBox 227](#_Toc69360759)

[2.4.4.370 UseGroupGradient 227](#_Toc69360760)

[2.4.4.371 Value 227](#_Toc69360761)

[2.4.4.372 VariationColorIndex 227](#_Toc69360762)

[2.4.4.373 VariationStyleIndex 228](#_Toc69360763)

[2.4.4.374 Verify 229](#_Toc69360764)

[2.4.4.375 VerticalAlign 229](#_Toc69360765)

[2.4.4.376 ViewMarkup 229](#_Toc69360766)

[2.4.4.377 Visible 229](#_Toc69360767)

[2.4.4.378 WalkPreference 229](#_Toc69360768)

[2.4.4.379 Width 230](#_Toc69360769)

[2.4.4.380 X 230](#_Toc69360770)

[2.4.4.381 XCon 230](#_Toc69360771)

[2.4.4.382 XDyn 230](#_Toc69360772)

[2.4.4.383 XGridDensity 230](#_Toc69360773)

[2.4.4.384 XGridOrigin 230](#_Toc69360774)

[2.4.4.385 XGridSpacing 230](#_Toc69360775)

[2.4.4.386 XJustify 230](#_Toc69360776)

[2.4.4.387 XRulerDensity 230](#_Toc69360777)

[2.4.4.388 XRulerOrigin 231](#_Toc69360778)

[2.4.4.389 Y 231](#_Toc69360779)

[2.4.4.390 YCon 231](#_Toc69360780)

[2.4.4.391 YDyn 231](#_Toc69360781)

[2.4.4.392 YGridDensity 231](#_Toc69360782)

[2.4.4.393 YGridOrigin 231](#_Toc69360783)

[2.4.4.394 YGridSpacing 231](#_Toc69360784)

[2.4.4.395 YJustify 231](#_Toc69360785)

[2.4.4.396 YRulerDensity 231](#_Toc69360786)

[2.4.4.397 YRulerOrigin 232](#_Toc69360787)

[2.4.5 Triggers 232](#_Toc69360788)

[2.4.5.1 CategoryChanged 232](#_Toc69360789)

[2.4.5.2 Path 232](#_Toc69360790)

[2.4.5.3 RecalcBkgPageName 232](#_Toc69360791)

[2.4.5.4 RecalcColor 232](#_Toc69360792)

[2.4.5.5 RecalcCreateDT 232](#_Toc69360793)

[2.4.5.6 RecalcData1 232](#_Toc69360794)

[2.4.5.7 RecalcData2 232](#_Toc69360795)

[2.4.5.8 RecalcData3 232](#_Toc69360796)

[2.4.5.9 RecalcEditDT 233](#_Toc69360797)

[2.4.5.10 RecalcID 233](#_Toc69360798)

[2.4.5.11 RecalcMasterName 233](#_Toc69360799)

[2.4.5.12 RecalcName 233](#_Toc69360800)

[2.4.5.13 RecalcNowAndRand 233](#_Toc69360801)

[2.4.5.14 RecalcPageCount 233](#_Toc69360802)

[2.4.5.15 RecalcPageName 233](#_Toc69360803)

[2.4.5.16 RecalcPageNum 233](#_Toc69360804)

[2.4.5.17 RecalcPath 233](#_Toc69360805)

[2.4.5.18 RecalcPrintDT 234](#_Toc69360806)

[2.4.5.19 RecalcSaveDT 234](#_Toc69360807)

[2.4.5.20 RecalcSummary 234](#_Toc69360808)

[2.4.5.21 RecalcType 234](#_Toc69360809)

[2.4.5.22 RelChanged 234](#_Toc69360810)

[2.4.5.23 ZOrderChanged 234](#_Toc69360811)

[2.5 Formula Expressions and Evaluation 234](#_Toc69360812)

[2.5.1 Formula ABNF and Full Grammar Definition 234](#_Toc69360813)

[2.5.2 Order of Operations 235](#_Toc69360814)

[2.5.3 Function Token Definitions 236](#_Toc69360815)

[2.5.3.1 Abs 236](#_Toc69360816)

[2.5.3.2 ACos 237](#_Toc69360817)

[2.5.3.3 Add 237](#_Toc69360818)

[2.5.3.4 And 238](#_Toc69360819)

[2.5.3.5 Ang360 239](#_Toc69360820)

[2.5.3.6 AngleToLoc 239](#_Toc69360821)

[2.5.3.7 AngleToPar 240](#_Toc69360822)

[2.5.3.8 ASin 241](#_Toc69360823)

[2.5.3.9 ATan2 241](#_Toc69360824)

[2.5.3.10 ATan 242](#_Toc69360825)

[2.5.3.11 BitAnd 242](#_Toc69360826)

[2.5.3.12 BitNot 242](#_Toc69360827)

[2.5.3.13 BitOr 243](#_Toc69360828)

[2.5.3.14 BitXor 243](#_Toc69360829)

[2.5.3.15 BkgPageName 244](#_Toc69360830)

[2.5.3.16 Blend 244](#_Toc69360831)

[2.5.3.17 Bound 245](#_Toc69360832)

[2.5.3.18 Cat 247](#_Toc69360833)

[2.5.3.19 Category 247](#_Toc69360834)

[2.5.3.20 Ceiling 247](#_Toc69360835)

[2.5.3.21 CellIsThemed 248](#_Toc69360836)

[2.5.3.22 Char 249](#_Toc69360837)

[2.5.3.23 Company 249](#_Toc69360838)

[2.5.3.24 Cos 249](#_Toc69360839)

[2.5.3.25 CosH 250](#_Toc69360840)

[2.5.3.26 Creator 250](#_Toc69360841)

[2.5.3.27 CY 250](#_Toc69360842)

[2.5.3.28 Date 251](#_Toc69360843)

[2.5.3.29 DateTime 252](#_Toc69360844)

[2.5.3.30 DateValue 252](#_Toc69360845)

[2.5.3.31 Day 253](#_Toc69360846)

[2.5.3.32 DayOfYear 253](#_Toc69360847)

[2.5.3.33 Deg 254](#_Toc69360848)

[2.5.3.34 DependsOn 254](#_Toc69360849)

[2.5.3.35 Description 255](#_Toc69360850)

[2.5.3.36 Directory 255](#_Toc69360851)

[2.5.3.37 Div 255](#_Toc69360852)

[2.5.3.38 DocCreation 257](#_Toc69360853)

[2.5.3.39 DocLastEdit 257](#_Toc69360854)

[2.5.3.40 DocLastPrint 257](#_Toc69360855)

[2.5.3.41 DocLastSave 258](#_Toc69360856)

[2.5.3.42 EEQ 258](#_Toc69360857)

[2.5.3.43 EGE 258](#_Toc69360858)

[2.5.3.44 EGT 259](#_Toc69360859)

[2.5.3.45 ELE 259](#_Toc69360860)

[2.5.3.46 ELT 260](#_Toc69360861)

[2.5.3.47 ENE 260](#_Toc69360862)

[2.5.3.48 FEQ 261](#_Toc69360863)

[2.5.3.49 FGE 261](#_Toc69360864)

[2.5.3.50 FGT 262](#_Toc69360865)

[2.5.3.51 FieldPicture 262](#_Toc69360866)

[2.5.3.52 FileName 263](#_Toc69360867)

[2.5.3.53 Find 263](#_Toc69360868)

[2.5.3.54 FLE 264](#_Toc69360869)

[2.5.3.55 Floor 265](#_Toc69360870)

[2.5.3.56 FLT 265](#_Toc69360871)

[2.5.3.57 FNE 266](#_Toc69360872)

[2.5.3.58 Format 266](#_Toc69360873)

[2.5.3.59 FormatEx 267](#_Toc69360874)

[2.5.3.60 FormulaExists 268](#_Toc69360875)

[2.5.3.61 Gravity 268](#_Toc69360876)

[2.5.3.62 Guard 269](#_Toc69360877)

[2.5.3.63 HasCategory 269](#_Toc69360878)

[2.5.3.64 Hour 270](#_Toc69360879)

[2.5.3.65 HSL 270](#_Toc69360880)

[2.5.3.66 Hue 271](#_Toc69360881)

[2.5.3.67 HueDiff 272](#_Toc69360882)

[2.5.3.68 HyperlinkBase 272](#_Toc69360883)

[2.5.3.69 ID 272](#_Toc69360884)

[2.5.3.70 IF 273](#_Toc69360885)

[2.5.3.71 IfError 273](#_Toc69360886)

[2.5.3.72 Index 274](#_Toc69360887)

[2.5.3.73 Int 275](#_Toc69360888)

[2.5.3.74 IntersectX 275](#_Toc69360889)

[2.5.3.75 IntersectY 276](#_Toc69360890)

[2.5.3.76 Intup 277](#_Toc69360891)

[2.5.3.77 Is1D 277](#_Toc69360892)

[2.5.3.78 IsErr 278](#_Toc69360893)

[2.5.3.79 IsErrNA 278](#_Toc69360894)

[2.5.3.80 IsError 279](#_Toc69360895)

[2.5.3.81 IsErrValue 279](#_Toc69360896)

[2.5.3.82 IsThemed 279](#_Toc69360897)

[2.5.3.83 Keywords 280](#_Toc69360898)

[2.5.3.84 Language 280](#_Toc69360899)

[2.5.3.85 Left 280](#_Toc69360900)

[2.5.3.86 Len 281](#_Toc69360901)

[2.5.3.87 Ln 281](#_Toc69360902)

[2.5.3.88 Loc 282](#_Toc69360903)

[2.5.3.89 LocalFormulaExists 282](#_Toc69360904)

[2.5.3.90 LocToLoc 283](#_Toc69360905)

[2.5.3.91 LocToPar 283](#_Toc69360906)

[2.5.3.92 Log10 284](#_Toc69360907)

[2.5.3.93 Lookup 284](#_Toc69360908)

[2.5.3.94 Lower 285](#_Toc69360909)

[2.5.3.95 Lum 286](#_Toc69360910)

[2.5.3.96 LumDiff 286](#_Toc69360911)

[2.5.3.97 Magnitude 287](#_Toc69360912)

[2.5.3.98 Manager 287](#_Toc69360913)

[2.5.3.99 MasterName 288](#_Toc69360914)

[2.5.3.100 Max 288](#_Toc69360915)

[2.5.3.101 Mid 289](#_Toc69360916)

[2.5.3.102 Min 289](#_Toc69360917)

[2.5.3.103 Minute 290](#_Toc69360918)

[2.5.3.104 Modulus 291](#_Toc69360919)

[2.5.3.105 Month 291](#_Toc69360920)

[2.5.3.106 MsoShade 292](#_Toc69360921)

[2.5.3.107 MsoTint 292](#_Toc69360922)

[2.5.3.108 Mul 293](#_Toc69360923)

[2.5.3.109 NA 294](#_Toc69360924)

[2.5.3.110 Name 294](#_Toc69360925)

[2.5.3.111 Not 295](#_Toc69360926)

[2.5.3.112 Now 295](#_Toc69360927)

[2.5.3.113 Nurbs 296](#_Toc69360928)

[2.5.3.114 Or 297](#_Toc69360929)

[2.5.3.115 PageCount 297](#_Toc69360930)

[2.5.3.116 PageName 298](#_Toc69360931)

[2.5.3.117 PageNumber 298](#_Toc69360932)

[2.5.3.118 Par 298](#_Toc69360933)

[2.5.3.119 Pct 299](#_Toc69360934)

[2.5.3.120 Pi 299](#_Toc69360935)

[2.5.3.121 Pnt 299](#_Toc69360936)

[2.5.3.122 Pntx 300](#_Toc69360937)

[2.5.3.123 PntY 300](#_Toc69360938)

[2.5.3.124 PolyLine 301](#_Toc69360939)

[2.5.3.125 Pow 302](#_Toc69360940)

[2.5.3.126 Rad 303](#_Toc69360941)

[2.5.3.127 Rand 303](#_Toc69360942)

[2.5.3.128 Ref 303](#_Toc69360943)

[2.5.3.129 Replace 304](#_Toc69360944)

[2.5.3.130 RGB 304](#_Toc69360945)

[2.5.3.131 Right 305](#_Toc69360946)

[2.5.3.132 Round 306](#_Toc69360947)

[2.5.3.133 Sat 306](#_Toc69360948)

[2.5.3.134 SatDiff 307](#_Toc69360949)

[2.5.3.135 Second 307](#_Toc69360950)

[2.5.3.136 SetAtRef 308](#_Toc69360951)

[2.5.3.137 SetAtRefEval 308](#_Toc69360952)

[2.5.3.138 SetAtRefExpr 309](#_Toc69360953)

[2.5.3.139 Shade 309](#_Toc69360954)

[2.5.3.140 ShapeText 309](#_Toc69360955)

[2.5.3.141 Sign 310](#_Toc69360956)

[2.5.3.142 Sin 311](#_Toc69360957)

[2.5.3.143 SinH 311](#_Toc69360958)

[2.5.3.144 Sqrt 312](#_Toc69360959)

[2.5.3.145 StrSame 312](#_Toc69360960)

[2.5.3.146 StrSameEx 313](#_Toc69360961)

[2.5.3.147 Sub 314](#_Toc69360962)

[2.5.3.148 Subject 315](#_Toc69360963)

[2.5.3.149 Substitute 316](#_Toc69360964)

[2.5.3.150 Sum 317](#_Toc69360965)

[2.5.3.151 Tan 317](#_Toc69360966)

[2.5.3.152 TanH 318](#_Toc69360967)

[2.5.3.153 TextHeight 318](#_Toc69360968)

[2.5.3.154 TextWidth 318](#_Toc69360969)

[2.5.3.155 Theme 319](#_Toc69360970)

[2.5.3.156 ThemeCBV 320](#_Toc69360971)

[2.5.3.157 ThemeGuard 321](#_Toc69360972)

[2.5.3.158 ThemeProp 321](#_Toc69360973)

[2.5.3.159 ThemeRestore 322](#_Toc69360974)

[2.5.3.160 ThemeVal 322](#_Toc69360975)

[2.5.3.161 Time 323](#_Toc69360976)

[2.5.3.162 TimeValue 324](#_Toc69360977)

[2.5.3.163 Tint 324](#_Toc69360978)

[2.5.3.164 Title 325](#_Toc69360979)

[2.5.3.165 Tone 325](#_Toc69360980)

[2.5.3.166 Trim 325](#_Toc69360981)

[2.5.3.167 Trunc 327](#_Toc69360982)

[2.5.3.168 UMinus 327](#_Toc69360983)

[2.5.3.169 UniChar 328](#_Toc69360984)

[2.5.3.170 UPlus 328](#_Toc69360985)

[2.5.3.171 Upper 329](#_Toc69360986)

[2.5.3.172 Use 329](#_Toc69360987)

[2.5.3.173 Version 329](#_Toc69360988)

[2.5.3.174 WeekDay 330](#_Toc69360989)

[2.5.3.175 Year 330](#_Toc69360990)

[2.5.4 Parse Token Definitions 331](#_Toc69360991)

[2.5.4.1 PtgAcre 331](#_Toc69360992)

[2.5.4.2 PtgAngDD 331](#_Toc69360993)

[2.5.4.3 PtgAngDft 332](#_Toc69360994)

[2.5.4.4 PtgAngDMS 332](#_Toc69360995)

[2.5.4.5 PtgAngRad 333](#_Toc69360996)

[2.5.4.6 PtgBool 333](#_Toc69360997)

[2.5.4.7 PtgByte 333](#_Toc69360998)

[2.5.4.8 PtgColorRGB 334](#_Toc69360999)

[2.5.4.9 PtgCy 334](#_Toc69361000)

[2.5.4.10 PtgDate 335](#_Toc69361001)

[2.5.4.11 PtgEDay 335](#_Toc69361002)

[2.5.4.12 PtgEHour 335](#_Toc69361003)

[2.5.4.13 PtgEMin 336](#_Toc69361004)

[2.5.4.14 PtgErr 336](#_Toc69361005)

[2.5.4.15 PtgESec 337](#_Toc69361006)

[2.5.4.16 PtgEWeek 337](#_Toc69361007)

[2.5.4.17 PtgHectare 337](#_Toc69361008)

[2.5.4.18 PtgInt 338](#_Toc69361009)

[2.5.4.19 PtgNum 338](#_Toc69361010)

[2.5.4.20 PtgNumCM 339](#_Toc69361011)

[2.5.4.21 PtgNumDft 339](#_Toc69361012)

[2.5.4.22 PtgNumF 340](#_Toc69361013)

[2.5.4.23 PtgNumFI 340](#_Toc69361014)

[2.5.4.24 PtgNumI 340](#_Toc69361015)

[2.5.4.25 PtgNumKM 341](#_Toc69361016)

[2.5.4.26 PtgNumM 341](#_Toc69361017)

[2.5.4.27 PtgNumMI 342](#_Toc69361018)

[2.5.4.28 PtgNumMM 342](#_Toc69361019)

[2.5.4.29 PtgNumMultiDim 343](#_Toc69361020)

[2.5.4.30 PtgNumNM 344](#_Toc69361021)

[2.5.4.31 PtgNumPct 344](#_Toc69361022)

[2.5.4.32 PtgNumYards 345](#_Toc69361023)

[2.5.4.33 PtgPageDft 345](#_Toc69361024)

[2.5.4.34 PtgPnt 345](#_Toc69361025)

[2.5.4.35 PtgShort 346](#_Toc69361026)

[2.5.4.36 PtgString 346](#_Toc69361027)

[2.5.4.37 PtgTDurDft 347](#_Toc69361028)

[2.5.4.38 PtgTypCD 347](#_Toc69361029)

[2.5.4.39 PtgTypCi 348](#_Toc69361030)

[2.5.4.40 PtgTypDft 348](#_Toc69361031)

[2.5.4.41 PtgTypDi 349](#_Toc69361032)

[2.5.4.42 PtgTypPi 349](#_Toc69361033)

[2.5.4.43 PtgTypPP 349](#_Toc69361034)

[2.5.4.44 PtgTypPt 350](#_Toc69361035)

[2.5.4.45 PtgUnsShort 350](#_Toc69361036)

[2.5.4.46 PtgNurbs 351](#_Toc69361037)

[2.5.4.47 PtgPolyLine 352](#_Toc69361038)

[2.5.5 Reference Token Definitions 353](#_Toc69361039)

[2.5.5.1 CellRef 353](#_Toc69361040)

[2.5.5.2 CrossPageRef 353](#_Toc69361041)

[2.5.5.3 DocSheetRef 353](#_Toc69361042)

[2.5.5.4 IndexedCellRef 353](#_Toc69361043)

[2.5.5.5 MasterSheetRef 354](#_Toc69361044)

[2.5.5.6 NamedCellRef 354](#_Toc69361045)

[2.5.5.7 PageSheetRef 355](#_Toc69361046)

[2.5.5.8 SectionRef 355](#_Toc69361047)

[2.5.5.9 ShapeSheetRef 356](#_Toc69361048)

[2.5.5.10 SingleLetterNamedCellRef 356](#_Toc69361049)

[2.5.5.11 StyleSheetRef 356](#_Toc69361050)

[2.5.6 Custom Input Type Definitions 357](#_Toc69361051)

[2.5.6.1 vBoolean 357](#_Toc69361052)

[2.5.6.2 vColor 357](#_Toc69361053)

[2.5.6.3 vDouble 357](#_Toc69361054)

[2.5.6.4 vDoubleEx 358](#_Toc69361055)

[2.5.6.5 vFloat 358](#_Toc69361056)

[2.5.6.6 vSignedInt 358](#_Toc69361057)

[2.5.6.7 vSignedLong 359](#_Toc69361058)

[2.5.6.8 vString 359](#_Toc69361059)

[2.5.6.9 vUnsignedInt 359](#_Toc69361060)

[2.5.6.10 vUnsignedLong 359](#_Toc69361061)

[2.5.7 Custom Token Groupings 360](#_Toc69361062)

[2.5.7.1 vAngle 360](#_Toc69361063)

[2.5.7.2 vAny 360](#_Toc69361064)

[2.5.7.3 vLength 360](#_Toc69361065)

[2.5.7.4 vNum 361](#_Toc69361066)

[2.5.7.5 vNumAny 361](#_Toc69361067)

[2.5.7.6 vScalar 361](#_Toc69361068)

[2.5.7.7 vUnitType 361](#_Toc69361069)

[2.5.8 Custom Internal Unit Types 361](#_Toc69361070)

[2.5.8.1 angleInternalUnitNumber 361](#_Toc69361071)

[2.5.8.2 durationInternalUnitNumber 361](#_Toc69361072)

[2.5.8.3 lengthInternalUnitNumber 361](#_Toc69361073)

[2.5.8.4 typographicInternalUnitNumber 361](#_Toc69361074)

[2.5.9 Custom Structures 362](#_Toc69361075)

[2.5.9.1 vCalendar 362](#_Toc69361076)

[2.5.9.2 vCurrency 362](#_Toc69361077)

[2.5.9.3 vDataType 368](#_Toc69361078)

[2.5.9.4 vFieldPicture 369](#_Toc69361079)

[2.5.9.5 vFont 371](#_Toc69361080)

[2.5.9.6 vFormatString 371](#_Toc69361081)

[2.5.9.7 vLanguage 376](#_Toc69361082)

[2.5.9.8 vLanguageID 377](#_Toc69361083)

[2.5.9.9 vLanguageString 377](#_Toc69361084)

[2.5.9.10 vPanose 388](#_Toc69361085)

[2.5.9.11 vThemeString 388](#_Toc69361086)

[2.5.9.12 vDynamicThemeString 390](#_Toc69361087)

[2.5.9.13 vThemeColor 418](#_Toc69361088)

[2.5.9.14 vThemeEffect 421](#_Toc69361089)

[2.5.9.14.1 Asian and Complex Font Properties 425](#_Toc69361090)

[2.5.9.15 vUnitString 428](#_Toc69361091)

[3 Structure Examples 431](#_Toc69361092)

[3.1 Document with a Shape on a Page 431](#_Toc69361093)

[3.1.1 Document XML Part 431](#_Toc69361094)

[3.1.2 Pages XML Part 434](#_Toc69361095)

[3.1.3 Page XML Part 435](#_Toc69361096)

[3.2 Document with Master Inheritance 438](#_Toc69361097)

[3.2.1 Masters XML Part 438](#_Toc69361098)

[3.2.2 Master XML Part 439](#_Toc69361099)

[3.2.3 Page XML Part 442](#_Toc69361100)

[4 Security 443](#_Toc69361101)

[4.1 Security Considerations for Implementers 443](#_Toc69361102)

[4.2 Index of Security Fields 443](#_Toc69361103)

[5 Appendix A: Full XML Schema 444](#_Toc69361104)

[6 Appendix B: Product Behavior 457](#_Toc69361105)

[7 Change Tracking 458](#_Toc69361106)

[8 Index 459](#_Toc69361107)

# Introduction

The Visio Graphics Service VSDX File Format describes a [Web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), which is a collection of [Drawing Pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b), [Masters](#Section_04e031963af24a52bd32ef5d79b9efc5), [Shapes](#Section_2995871af1b144e69754989fb760ee18), [Images](#Section_c7915a6e1cd84633ad57261c2da081ae), [Comments](#Section_60086b03a61f4e25ac5b943c02a66d8e), [Data Connections](#Section_0c83304b6f034218bfb1a49d51060e9c), and recalculation information that can be rendered as a drawing.

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:

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

**American National Standards Institute (ANSI) character set**: A [**character set**](#gt_5004b992-4a9c-41c9-b65c-b2e7a2b04204) defined by a code page approved by the American National Standards Institute (ANSI). The term "ANSI" as used to signify Windows code pages is a historical reference and a misnomer that persists in the Windows community. The source of this misnomer stems from the fact that the Windows code page 1252 was originally based on an ANSI draft, which became International Organization for Standardization (ISO) Standard 8859-1 [[ISO/IEC-8859-1]](https://go.microsoft.com/fwlink/?LinkId=90689). In Windows, the ANSI character set can be any of the following code pages: 1252, 1250, 1251, 1253, 1254, 1255, 1256, 1257, 1258, 874, 932, 936, 949, or 950. For example, "ANSI application" is usually a reference to a non-[**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) or code-page-based application. Therefore, "ANSI character set" is often misused to refer to one of the character sets defined by a Windows code page that can be used as an active system code page; for example, character sets defined by code page 1252 or character sets defined by code page 950. Windows is now based on [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8), so the use of ANSI character sets is strongly discouraged unless they are used to interoperate with legacy applications or legacy data.

**assembly name**: The name of a collection of one or more files that is versioned and deployed as a unit. See also assembly.

**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).

**bitmap (BMP)**: A representation of characters or graphics by individual pixels. The pixels can be arranged in rows (horizontal) and columns (vertical). Each pixel can be represented by one or more bits.

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

**character set**: A mapping between the characters of a written language and the values that are used to represent those characters to a computer.

**class name**: The name that is used to refer to a class module that provides an implementation of a behavior.

**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.

**connection string**: A series of arguments, delimited by a semicolon, that defines the location of a database and how to connect to it.

**culture name**: A part of a language identification tagging system, as described in [[RFC1766]](https://go.microsoft.com/fwlink/?LinkId=120475). Culture names adhere to the format "<languagecode2>-<country/regioncode2>." If a two-letter language code is not available, a three-letter code that is derived from [[ISO-639]](https://go.microsoft.com/fwlink/?LinkId=100294) is used.

**data provider**: A known data source that is specific to a target type and that provides data to a collector type.

**data source**: A database, web service, disk, file, or other collection of information from which data is queried or submitted. Supported data sources vary based on application and data provider.

**drawing**: A collection of drawing objects, such as shapes, curves, or WordArt, that are viewed together as a single image.

**embedded image**: An image that is stored within a document rather than being linked to a source file that is outside the document.

**embedded object**: An object that is created by using one application and is hosted in a document that was created by using another application. Embedding an object, rather than inserting or pasting it, ensures that the object retains its original format. Users can double-click an embedded object and edit it with the toolbars and menus from the application that was used to create it. See also Object Linking and Embedding (OLE).

**enhanced metafile format (EMF)**: A file format that supports the device-independent definitions of images.

**field**: An element or attribute in a data source that can contain data.

**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.

**font**: An object that defines the graphic design, or formatting, of a collection of numbers, symbols, and letters. A font specifies the style (such as bold and strikeout), size, family (a typeface such as Times New Roman), and other qualities to describe how the collection is drawn.

**gamma correction**: In digital imaging, the process of changing the brightness, contrast, or color balance of an image by assigning new values (different colors) to gray or color tones.

**globally unique identifier (GUID)**: A term used interchangeably with universally unique identifier (UUID) in Microsoft protocol technical documents (TDs). Interchanging the usage of these terms does not imply or require a specific algorithm or mechanism to generate the value. Specifically, the use of this term does not imply or require that the algorithms described in [[RFC4122]](https://go.microsoft.com/fwlink/?LinkId=90460) or [[C706]](https://go.microsoft.com/fwlink/?LinkId=89824) must be used for generating the [**GUID**](#gt_f49694cc-c350-462d-ab8e-816f0103c6c1). See also universally unique identifier (UUID).

**Graphics Interchange Format (GIF)**: A compression format that supports device-independent transmission and interchange of bitmapped image data. The format uses a palette of up to 256 distinct colors from the 24-bit [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color space. It also supports animation and a separate palette of 256 colors for each frame. The color limitation makes the GIF format unsuitable for reproducing color photographs and other images with gradients of color, but it is well-suited for simpler images such as graphics with solid areas of color.

**header row**: A row in a table, typically the first row, that contains labels for columns in the table.

**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 and [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5).

**hyperlink location**: A portion of a hyperlink that specifies the location of a specific item, such as a bookmark, within a document, object, or other type of resource; for example "#bookmark" in the hyperlink location C:\Documents\Document.docx#bookmark.

**Hypertext Transfer Protocol (HTTP)**: An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

**Joint Photographic Experts Group (JPEG)**: A raster graphics file format for displaying high-resolution color graphics. JPEG graphics apply a user-specified compression scheme that can significantly reduce the file sizes of photo-realistic color graphics. A higher level of compression results in lower quality, whereas a lower level of compression results in higher quality. JPEG-format files have a .jpg or .jpeg file name extension.

**language code identifier (LCID)**: A 32-bit number that identifies the user interface human language dialect or variation that is supported by an application or a client computer.

**list**: An organization of a region of cells into a tabular structure in a workbook.

**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.

**Office data connection (ODC) file**: A file that stores information about a connection to a data source, such as an Access database, worksheet, or text file. This file facilitates data source administration.

**OLE DB**: A set of interfaces that are based on the Component Object Model (COM) programming model and expose data from a variety of sources. These interfaces support the amount of Database Management System (DBMS) functionality that is appropriate for a data store and they enable a data store to share data.

**Open Database Connectivity (ODBC)**: A standard software API method for accessing data that is stored in a variety of proprietary personal computer, minicomputer, and mainframe databases. It is an implementation of [[ISO/IEC9075-3:2008]](https://go.microsoft.com/fwlink/?LinkId=223900) and provides extensions to that standard.

**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.

**primary key**: A field or set of fields that uniquely identifies each record in a table. A primary key cannot contain a null value.

**query**: A formalized instruction to a data source to either extract data or perform a specified action. A query can be in the form of a query expression, a method-based query, or a combination of the two. The data source can be in different forms, such as a relational database, XML document, or in-memory object. See also search query.

**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.

**row**: A single set of data that is displayed horizontally in a worksheet or a table.

**Tagged Image File Format (TIFF)**: A high-resolution, tag-based graphics format. TIFF is used for the universal interchange of digital graphics.

**text run**: A string of characters that represents a discrete span of text with the same formatting properties.

**token**: A word in an item or a search query that translates into a meaningful word or number in written text. A token is the smallest textual unit that can be matched in a search query. Examples include "cat", "AB14", or "42".

**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 Identifier (URI)**: A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [[RFC3986]](https://go.microsoft.com/fwlink/?LinkId=90453).

**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).

**UTF-16**: A standard for encoding Unicode characters, defined in the Unicode standard, in which the most commonly used characters are defined as double-byte characters. Unless specified otherwise, this term refers to the UTF-16 encoding form specified in [UNICODE5.0.0/2007] section 3.9.

**view**: See form view (Microsoft InfoPath), list view (SharePoint Products and Technologies), or [**View**](#gt_3f793b0b-9509-4df0-89f9-92f07954beb8) (Microsoft Business Connectivity Services).

**whitespace**: A character that can be found between words, including a space (" "), a carriage return in combination with a line feed (newline), and a tab character.

**workbook**: A container for a collection of sheets.

**zero-based index**: An index in which the first item has an index of "0" (zero).

**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.

[GIF89a] CompuServe Incorporated, "Graphics Interchange Format(sm)", Graphics Interchange Format Programming Reference, July 1990, [http://www.w3.org/Graphics/GIF/spec-gif89a.txt](https://go.microsoft.com/fwlink/?LinkId=120784)

[IEEE754] IEEE, "IEEE Standard for Binary Floating-Point Arithmetic", IEEE 754-1985, October 1985, [http://ieeexplore.ieee.org/servlet/opac?punumber=2355](https://go.microsoft.com/fwlink/?LinkId=89903)

[ISO-15924] International Organization for Standardization, "ISO 15924 Registration Authority", [http://www.unicode.org/iso15924/](https://go.microsoft.com/fwlink/?LinkId=100295)

[ISO-8601] International Organization for Standardization, "Data Elements and Interchange Formats - Information Interchange - Representation of Dates and Times", ISO/IEC 8601:2004, December 2004, [http://www.iso.org/iso/en/CatalogueDetailPage.CatalogueDetail?CSNUMBER=40874&ICS1=1&ICS2=140&ICS3=30](https://go.microsoft.com/fwlink/?LinkId=89920)

**Note** There is a charge to download the specification.

[ISO/IEC29500-1:2016] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 1: Fundamentals and Markup Language Reference", ISO/IEC 29500-1:2016, [https://www.iso.org/standard/71691.html](https://go.microsoft.com/fwlink/?linkid=861065)

[ISO/IEC29500-2:2012] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 2: Open Packaging Conventions", ISO/IEC 29500-2:2012, [http://www.iso.org/iso/home/store/catalogue\_ics/catalogue\_detail\_ics.htm?csnumber=61796](https://go.microsoft.com/fwlink/?LinkID=330448)

[ISO/IEC29500-3:2015] ISO/IEC, "Information technology -- Document description and processing languages -- Office Open XML File Formats -- Part 3: Markup Compatibility and Extensibility", [https://www.iso.org/standard/65533.html](https://go.microsoft.com/fwlink/?linkid=861154)

[JFIF] Hamilton, E., "JPEG File Interchange Format, Version 1.02", September 1992, [http://www.w3.org/Graphics/JPEG/jfif.txt](https://go.microsoft.com/fwlink/?LinkId=89925)

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

[MS-OAUT] Microsoft Corporation, "[OLE Automation Protocol](%5bMS-OAUT%5d.pdf#Section_bbb05720f72445c78d17f83c3d1a3961)".

[MS-ODBCSTR] Microsoft Corporation, "[ODBC Connection String Structure](%5bMS-ODBCSTR%5d.pdf#Section_13b4e848b36c4b11acced6bf199d5391)".

[MSDN-BMPST] Microsoft Corporation, "Bitmap Storage", [http://msdn.microsoft.com/en-us/library/dd183391(VS.85).aspx](https://go.microsoft.com/fwlink/?LinkId=222603)

[RFC2083] Boutell, T., et al., "PNG (Portable Network Graphics) Specification Version 1.0", RFC 2083, March 1997, [http://www.ietf.org/rfc/rfc2083.txt](https://go.microsoft.com/fwlink/?LinkId=90313)

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", BCP 14, RFC 2119, March 1997, [http://www.rfc-editor.org/rfc/rfc2119.txt](https://go.microsoft.com/fwlink/?LinkId=90317)

[RFC3302] Parsons, G., and Rafferty, J., "Tag Image File Format (TIFF) - image/tiff MIME Sub-Type Registration", RFC 3302, September 2002, [http://www.ietf.org/rfc/rfc3302.txt](https://go.microsoft.com/fwlink/?LinkId=90416)

[RFC3629] Yergeau, F., "UTF-8, A Transformation Format of ISO 10646", STD 63, RFC 3629, November 2003, [http://www.ietf.org/rfc/rfc3629.txt](https://go.microsoft.com/fwlink/?LinkId=90439)

[RFC4646] Phillips, A., and Davis, M., Eds., "Tags for Identifying Languages", BCP 47, RFC 4646, September 2006, [http://www.rfc-editor.org/rfc/rfc4646.txt](https://go.microsoft.com/fwlink/?LinkId=123591)

[RFC4647] Phillips, A., and Davis, M., Eds., "Matching of Language Tags", BCP 47, RFC 4647, September 2006, [http://www.rfc-editor.org/rfc/rfc4647.txt](https://go.microsoft.com/fwlink/?LinkId=113490)

[RFC5234] Crocker, D., Ed., and Overell, P., "Augmented BNF for Syntax Specifications: ABNF", STD 68, RFC 5234, January 2008, [http://www.rfc-editor.org/rfc/rfc5234.txt](https://go.microsoft.com/fwlink/?LinkId=123096)

[XMLSCHEMA1] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, [http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/](https://go.microsoft.com/fwlink/?LinkId=90608)

[XMLSCHEMA2] Biron, P.V., Ed. and Malhotra, A., Ed., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, [http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/](https://go.microsoft.com/fwlink/?LinkId=90610)

### Informative References

[MS-OLEDS] Microsoft Corporation, "[Object Linking and Embedding (OLE) Data Structures](%5bMS-OLEDS%5d.pdf#Section_85583d21c1cf4afea35fd6701c5fbb6f)".

[MSDN-CompareOptions] Microsoft Corporation, "CompareOptions Enum", [https://docs.microsoft.com/en-us/dotnet/api/system.globalization.compareoptions](https://go.microsoft.com/fwlink/?LinkId=180505)

[MSDN-ENCLOC] Microsoft Corporation, "Encoding and Localization", .NET Framework Developer's Guide, [http://msdn.microsoft.com/en-us/library/h6270d0z.aspx](https://go.microsoft.com/fwlink/?LinkId=153669)

[MSDN-ToDouble] Microsoft Corporation, "Convert.ToDouble Method", .NET Framework Class Library, [http://msdn.microsoft.com/en-us/library/system.convert.todouble.aspx](https://go.microsoft.com/fwlink/?LinkId=153666)

[RFC2616] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, [http://www.rfc-editor.org/rfc/rfc2616.txt](https://go.microsoft.com/fwlink/?LinkId=90372)

## Overview

This structure describes a ZIP archive that stores all the information needed to describe a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

A [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71) in the ZIP archive describes the properties of the web drawing.

A collection of [Visio parts](#Section_96a4d5852ad644fd98b0767f130957d4) and Shared XML parts in the ZIP archive describes the graphical elements displayed in the web drawing. These graphical elements are presented as [Shapes](#Section_2995871af1b144e69754989fb760ee18) on [Drawing Pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b). Shapes are described by the [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11), [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a), and [Themes XML Part](#Section_24711011cb574f6d8de85b95ac64f40a). Drawing Pages are described by the [Masters XML Part](#Section_ac2cee21ca0e459b85e335908a476f70) and [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3).

Graphical elements can be static or dynamic. Dynamic graphical elements have visual properties that are bound to data in a [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075), and the appearance of these elements changes as data in the data source refreshes (section [2.2.10](#Section_67d73a1ab5b148bf864c1d426a2df206)). A collection of Visio parts in the ZIP archive describes the [Data Connections](#Section_0c83304b6f034218bfb1a49d51060e9c), bindings (section [2.2.10.2.1](#Section_9ab2ddda33b5434d9256bd769e300cd1)) between data and shapes, and recalculation information necessary to update (section [2.2.11](#Section_3b9d352a42924aa9b5fec66141d0c5e1)) visual properties. Data connections are described by the [Connections XML part](#Section_3f772fce51914e5084545086060dfd87). Data bindings are described by the [Recordsets XML part](#Section_8efdea2d0ddf4e039750a0e16b99320a). Recalculation information is described by a grammar (section [2.2.11.2.1](#Section_e715b9f4e36e402bb9625894c4ad7532)) for [Formula Evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) that describes how changes in the data are translated into changes in properties of graphical elements. This grammar is described by the Master XML part and Page XML part.

Additional items in the ZIP archive describe the [Images](#Section_c7915a6e1cd84633ad57261c2da081ae) and [Comments](#Section_60086b03a61f4e25ac5b943c02a66d8e) in the web drawing.

## Relationship to Protocols and Other Structures

This specification is dependent on the structures and concepts defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448), [[ISO/IEC29500-3:2015]](https://go.microsoft.com/fwlink/?linkid=861154) and [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 9 for Open Packaging Conventions.

## Applicability Statement

This document specifies a persistence format for [Web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) content, which can include [Drawing Pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b), [Masters](#Section_04e031963af24a52bd32ef5d79b9efc5), [Shapes](#Section_2995871af1b144e69754989fb760ee18), [Images](#Section_c7915a6e1cd84633ad57261c2da081ae), [Comments](#Section_60086b03a61f4e25ac5b943c02a66d8e), [Data Connections](#Section_0c83304b6f034218bfb1a49d51060e9c), and recalculation information, as specified in Section 2.2.1. The persistence format is applicable when the document content is graphical in nature.

This persistence format is applicable for use as a stand-alone document, and for containment within other documents as an [**embedded object**](#gt_708607be-8655-416e-93f3-b434e9ecbd56), 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.

## Versioning and Localization

This document covers versioning issues in the following areas:

* [App XML Part](#Section_85e85f4058134276aed798b4d83506d0)
* [Custom XML Part](#Section_c75d20e9d458436bbb4c97c3202c2966)
* [Version](#Section_f28ecd7b2b224f9ba7615d81198860e7)

This document covers localization in the [Core XML Part](#Section_f7c9761b3ff14dd59319ebd0af457c99).

Local overrides to document language are specified in attributes, properties, and function arguments as described in the [Conceptual Overview](#Section_df6e4f8dd9c64d5e8b24c23e9c5e075e), [Visio XML Schema](#Section_29ffbc41defe4e30af7d2fe2826ca139), [ShapeSheet Properties](#Section_618d877ecefe4b07a0ab90ee61526bc4), and [Formula Expressions and Evaluation](#Section_aa03f278e801428da9e12febd62c893b) sections.

## Vendor-Extensible Fields

Persistence format can be extended by storing information in [Parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that are not specified in Section [2](#Section_1af3bf7bc2424b53a2ceef81083d5cb7). Implementations are not required to preserve or remove additional Parts when modifying an existing document.

# Structures

This section specifies the overall structure of a file that conforms to this specification.

## File Structure Overview

A file of the type specified by this specification MUST be a [Package](#Section_ff1e06b02ee244c8b28670c07383662a) that is a ZIP archive.

The ZIP Package is used to persist information that is necessary to fully represent a [web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). This package contains a collection of [Parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that are used to persist data in XML or standard binary formats, and to specify various aspects of the Web Drawing as well as the structure of the Package.

### Package

A file of the type specified by this document MUST be a Package that is a ZIP archive and that conforms to the Open Packaging Conventions as specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448), the further packaging restrictions specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 9, and this specification.

### Parts

A [Package](#Section_ff1e06b02ee244c8b28670c07383662a) is composed of multiple parts as specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 9.1. Each part has an associated content type that specifies the format it is persisted in. Each part can also be the target or the source of a connection between two parts called a relationship (section [2.1.3](#Section_df1591d7f2814f2da496f29f14f4c0e4)), as specified in [ISO/IEC29500-2:2012] section 9.3.

The valid parts, content types, required relationships, and optional relationships between all parts in this package are specified in [Part Enumeration](#Section_33056f18c2584a29802603c58cbc8bca).

### Relationship

A relationship specifies a connection between a source and a target resource as specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 9.2. Relationship identifiers are used in binary and XML part (section [2.1.2](#Section_86c4746a7cad41e0a8ebee8fa420f4c7)) content to reference unique relationship elements in relationship parts that in turn target other resources.

There are several different types of relationships:

* A [Package](#Section_ff1e06b02ee244c8b28670c07383662a) relationship is a relationship where the target is a part and the source is the package as a whole.
* A part-to-part relationship is a relationship where the target is a part and the source is a part in the package.
* An explicit relationship is a relationship where a resource is referenced from the contents of a source part by referencing the **ID** attribute value of a relationship element.
* An implicit relationship is a relationship where a resource is not referenced from the contents of a source part by referencing the **ID** attribute value of a relationship element.
* An internal relationship is a relationship where the target is a part in the package.
* An external relationship is a relationship where the target is an external resource, not part of the package.

### Markup Compatibility

A markup specification defines a set of elements and attributes within one or more namespaces. A characteristic of an application that consumes the markup is that it can recognize the elements and attributes within understood namespaces, including those containing elements and attributes defined in the markup specification. Markup consumers MUST treat all recognized elements and attributes of any understood namespace according to the requirements of the markup specifications defining those elements or attributes. A markup specification MAY require that the presence of unrecognized elements or attributes in an understood namespace be treated as an error condition; however, markup consumers MUST treat the presence of an unrecognized element or attribute from the Markup Compatibility namespace as an error condition.

If a markup consumer encounters an element or attribute from a non-understood namespace, the markup consumer MUST treat the presence of that element or attribute as an error condition, unless the markup producer has embedded in the markup document explicit Markup Compatibility elements or attributes that override that behavior.

The valid Markup Compatibility elements and attributes in a [Web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) are specified in the Markup Compatibility Schema (section [2.3.5](#Section_c11c44262af449ba905a59117b667f21)).

## Conceptual Overview

The Conceptual Overview sections that follow specify how higher-level features of the file format are represented by combinations of [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) and XML elements.

### Web Drawing

A web drawing is a collection of [Drawing Pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b), [Masters](#Section_04e031963af24a52bd32ef5d79b9efc5), [Shapes](#Section_2995871af1b144e69754989fb760ee18), [Images](#Section_c7915a6e1cd84633ad57261c2da081ae), [Comments](#Section_60086b03a61f4e25ac5b943c02a66d8e), [Data Connections](#Section_0c83304b6f034218bfb1a49d51060e9c), and recalculation information that can be rendered as a [**drawing**](#gt_4b4d1a42-c4a2-464d-ad16-d53b5c493fd3) in a web browser.

A web drawing is specified by a [Package](#Section_ff1e06b02ee244c8b28670c07383662a) as specified in the [File Structure Overview](#Section_30536debd7b24b72b59ce80b34b87c6e). The contents of a web drawing are specified by the [Parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) in the [Part Enumeration](#Section_33056f18c2584a29802603c58cbc8bca) section.

For examples of various web drawings, see [Structure Examples](#Section_336cde0cb48942ddabc684e2063c5e1d).

### Drawing Page

A drawing page is a collection of [Shapes](#Section_2995871af1b144e69754989fb760ee18) that are viewed together.

A collection of drawing pages in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is specified by a [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3).

#### Page Identification

A [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element in a [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3) specifies a single [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). A drawing page is uniquely identified by the **ID**, **Name**, and **NameU** attributes in a Page\_Type element. The following elements in [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) have attributes that are equal to **ID**, **Name**, or **NameU** and specify supplementary information about the drawing page.

* A [PublishedPage\_Type](#Section_f19d7de035d846aa93622b62852e0c09) element in a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71) has an **ID** attribute that is equal to the **ID** attribute of the Page\_Type element, and specifies that the drawing page is viewable in the web drawing.
* A **TitlesOfParts** element in an [App XML Part](#Section_85e85f4058134276aed798b4d83506d0) contains an **lpstr** element with contents equal to the **Name** attribute of the Page\_Type element and specifies the name of the drawing page.
* A Page\_Type element in a Pages XML Part can have a **BackPage** attribute that is equal to the **ID** attribute of the Page\_Type element, and specifies that the latter drawing page is to be used as the background page for the former drawing page.
* A [RowMap\_Type](#Section_ffc00766ecc44e5cb5eeedda9bc0f58e) element in the [Recordsets XML Part](#Section_8efdea2d0ddf4e039750a0e16b99320a) contains a **PageID** attribute that is equal to the **ID** attribute of the Page\_Type element, and specifies the data binding between a [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of a [Recordset](#Section_5c84498371344d01bcee8e705c2efd1c) and a [Shape](#Section_2995871af1b144e69754989fb760ee18) on the drawing page.

The graphical information necessary to render a drawing page is specified by the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) and [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) elements in a Pages XML Part and a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) element in a [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a).

A drawing page is also associated with a [Master](#Section_04e031963af24a52bd32ef5d79b9efc5). The graphical information about a Master is specified by the PageSheet\_Type and Shapes\_Type elements in a [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11).

A drawing page can contain [**embedded images**](#gt_c2dd082b-6519-49a2-99e9-77b671621249). Each [Image](#Section_c7915a6e1cd84633ad57261c2da081ae) used in a drawing page is specified by an [Image Part](#Section_949e69ecfcd64ca0be82c30421c1f9a0). The [Fallback Image](#Section_df1d23b86a304991bfeb062f265ab5a1) section explains how some embedded image formats and [**embedded objects**](#gt_708607be-8655-416e-93f3-b434e9ecbd56) are rendered using Fallback Images which are also specified by Image Parts.

#### Coordinate System

A point on a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) is specified by coordinates on a two-dimensional Cartesian plane, where the x-coordinate specifies the horizontal position and the y-coordinate specifies the vertical position.

The origin of a drawing page is the lower-left corner of the drawing page.

Increasing the x-coordinate specifies the position of a [Shape](#Section_2995871af1b144e69754989fb760ee18), group or object rightward, while increasing the y-coordinate specifies the position upward.

Every drawing page defines its own coordinate system.

#### Drawing Scale

The drawing scale of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) is the ratio of the values of the [PageScale](#Section_d1bc58679407440fb419f94aaddb67b9) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element to the value of the [DrawingScale](#Section_b816dca6ba524f9fa65d6c737378e3e9) Cell\_Type element.

Drawing units specify size or position of objects on the drawing page. Page units specify measurements on the printed page.

The drawing scale multiplied by the drawing units will result in a scaled object.

The following cells are not expressed in drawing units and are not scaled. All other [vLengths](#Section_f809c3999b1c4a688984764d079d153c) are expressed in drawing units and will be scaled.

* [BeginArrowSize](#Section_9ea88ec87a3e4ea69caaa823f50f0707), [EndArrowSize](#Section_c6eef25a120041e5b838f9211941a34f)
* [GlowSize](#Section_acb99b53189d4d65a92f7239171c2f0b)
* [ReflectionBlur](#Section_3a1cfddd550e410c953802bd092d7114)
* [ReflectionDist](#Section_dd2a36036ffb47f98f47c6cf866f069d)
* [SoftEdgesSize](#Section_768a404663c742cf8f3d11f85a275235)
* [LineWeight](#Section_358e71950fb34e338b39b801d79d84a0)
* [FontScale](#Section_de9543b4227c40cfbf264dad9056122c), [Size](#Section_d905a600d3c94f5181d83f51117ebbc4)
* [AsianFont](#Section_18e2f228bed14e60b64eb2517e657c13)
* [Case](#Section_54760757e99e4c2d9c56c215bd18ff5a)
* [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc), [ColorTrans](#Section_4b03b138a65641b4bc0d6028359096cf)
* [DblUnderline](#Section_610c9764bbe64da0b7239c7520580f0b)
* [ComplexScriptFont](#Section_51cdec724a7644a292617ea906fd32b4), [ComplexScriptSize](#Section_b6f7381dd8b8491fbbc58e1dd49f95e2)
* [DoubleStrikethrough](#Section_97b6dcbd5ceb4626b3df044191a70af5)
* [Overline](#Section_d68a13dfe7564a84ae04de9b84f8c6fb)
* [Pos](#Section_fa0bb48943a947bf96e360d5b780a777)
* [Strikethru](#Section_74eb7e63e1b34064917d80fd4ddfcb5f)
* [Style](#Section_a87e85eecf764e0ba09e638c871c28e2)
* [BevelTopWidth](#Section_903a8d7c15a14efa9e8d68933d64e7de), [BevelTopHeight](#Section_0614ed0e76a7400a955dff1766769c54), [BevelBottomWidth](#Section_e6761a85ceb140c29d8ebd38f87ec85d), [BevelBottomHeight](#Section_5951a333278a4cedac1473e4a4050596)
* [BevelDepthSize](#Section_101ee2fa5d32429ba191ce7c96c7d411), [BevelContourSize](#Section_a362bb43b6ea48f09f48b4224a44b211)
* [ShdwOffsetX](#Section_d5df1f51922a418995ba4a4bfa7631b6), [ShdwOffsetY](#Section_5835fe653c33455c8ac855af7da45f48)
* [DistanceFromGround](#Section_04af4beaf104430d8bf650e145a79a54)

#### Foreground Page

A [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) can be a foreground page. A [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) contains at least one foreground page.

The [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element specifies whether a page is a foreground page in a web drawing. If a Page\_Type element in a [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3) contains a **Background** attribute equal to zero, it is a foreground page.

A foreground page in a web drawing has zero or one background pages as specified by the **BackPage** attribute of the Page\_Type element associated with the page.

A foreground page can be published or unpublished. Published pages are viewable in a web drawing while unpublished pages are hidden. The [PublishSettings\_Type](#Section_5351e0e3dbdd45e8a0bacc4c7482ac94) child element of the [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79) element for the web drawing determines whether a page is published or unpublished.

#### Background Page

A background page is a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) that can appear behind [foreground pages](#Section_2b3a03240644467fb822f24e28fa5d11) and other background pages in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

A background page can have a different [drawing scale](#Section_1a60ffcb969c48f1aa02ff2228718043) than a foreground page.

A background page in a web drawing is specified by the [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element associated with the page.

If the Page\_Type element associated with the page contains a **Background** attribute equal to one, it is a background page.

A background page in a web drawing has zero or one background pages as specified by the **BackPage** attribute of the Page\_Type element associated with the page.

#### Layer

A [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can have layers. A [shape](#Section_2995871af1b144e69754989fb760ee18) belongs to zero or more layers. A layer can contain zero or more shapes. A layer specifies additional information about the shapes that it contains such as color, color transparency, and visibility.

A layer in a web drawing is specified by the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) element. A Layer Section\_Type element is a child of a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element associated with the [page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

Each Row\_Type child element of the Layer Section\_Type element contains information for a single layer. A layer is uniquely identified by the **IX** attribute of that layer’s Row\_Type.

A collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements that define a layer’s properties is composed of [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc), [Visible](#Section_5ef4de9383ed436383146f688f211e4a), [Lock](#Section_b8e1a8eb2c3d457c88db324b356ffc7a), and [ColorTrans](#Section_4b03b138a65641b4bc0d6028359096cf).

The layer membership of a shape is specified by the [LayerMember](#Section_542dbb11d1014405b73cc74a65764985) Cell\_Type element in the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element of the shape.

### Shape

A shape is a collection of [Geometry Visualization](#Section_b690bcd44466465b938fc0cf7019eb39), [Format](#Section_f63759284c0642dda31cbbab14930e93), [Text](#Section_9aec7e652abe4518aaa7650e2fd6ceff), [Images](#Section_c7915a6e1cd84633ad57261c2da081ae), and [Shape Data](#Section_89012d8abbf44af08c31a22e6eb61f2a) in a [Drawing Page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

#### Shape Identification

A [Shape](#Section_2995871af1b144e69754989fb760ee18) in a [Web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is specified by a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of either a [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [Page\_XML\_Part](#Section_1f15c8f06565465caefd2be6af545e8a), or a [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11).

A Shape is uniquely identified within a [Drawing Page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) by the **ID** attribute of its ShapeSheet\_Type element. The following elements in other [Parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) of the document have attributes that reference shapes by their **ID** attributes to specify supplementary information about them.

* A [RowMap\_Type](#Section_ffc00766ecc44e5cb5eeedda9bc0f58e) element specifies the shape it is bound to in its **ShapeID** attribute.
* A [CommentEntry\_Type](#Section_6fac1d129c364e669dc904242178777e) element specifies the shape it relates to in its **ShapeID** attribute.
* The [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470) [Reference Token](#Section_a5d209e86bf34212acb3509df1b76d7d) references a shape.

##### One-Dimensional Shape

A [Shape](#Section_2995871af1b144e69754989fb760ee18) is one-dimensional if its [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element has [BeginX](#Section_bf96b96198884f5aa89d27dcf80ed494), [BeginY](#Section_aa0c49ec491a4371aff7d1a1179a9aa5), [EndX](#Section_7a68ed9a206049f2bff39296b518cc33), and [EndY](#Section_e4e68dcd0d7440bf91a83e51432996ac) child elements of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

##### Two-Dimensional Shape

A [Shape](#Section_2995871af1b144e69754989fb760ee18) is two-dimensional if its [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element has no [BeginX](#Section_bf96b96198884f5aa89d27dcf80ed494), [BeginY](#Section_aa0c49ec491a4371aff7d1a1179a9aa5), [EndX](#Section_7a68ed9a206049f2bff39296b518cc33), or [EndY](#Section_e4e68dcd0d7440bf91a83e51432996ac) child elements of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

#### Geometry Visualization

Geometry on [Shape](#Section_2995871af1b144e69754989fb760ee18)s in a [Web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be visualized.

The following sections specify the concepts and elements of geometry visualization.

##### Coordinate System

A point on a [Drawing Page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) or a [Shape](#Section_2995871af1b144e69754989fb760ee18) is specified by coordinates on a two-dimensional Cartesian plane, where the x-coordinate specifies the horizontal position and the y-coordinate specifies the vertical position.

Every Shape defines a local coordinate system. A point on a shape is specified either in its local coordinates or in the coordinate system of the shape’s [Parent](#Section_901ceba559e64aba90342042efc1d354), depending on the **N** attribute of the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element specifying this point.

A point specified in local coordinates can be converted into parent coordinates by applying the following transformations in the following order:

1. Subtract the value of the [LocPinX](#Section_418310fde01e4d63b948b0ff3eceeca3) property of the Cell\_Type element from the x-coordinate.
2. Subtract the value of the [LocPinY](#Section_fd5943ad21694b5d92e5d22bacc51a78) property of the Cell\_Type from the y-coordinate.
3. Mirror the point about the y-axis if the value of the [FlipX](#Section_6279be426dca495b910aa84512fdc2f1) property of the Cell\_Type is equal to one.
4. Mirror the point about the x-axis if the value of the [FlipY](#Section_2c77fe58deff48e9ad5dd108fb5d769e) property of the Cell\_Type is equal to one.
5. Rotate the point counterclockwise around the origin by the value of the [Angle](#Section_2f78fef45f9f42618dee649e30843985) property of the Cell\_Type.
6. Add the value of the [PinX](#Section_b68fb65a6d934afa86c394dcc6e13c5e) Cell\_Type to the x-coordinate.
7. Add the value of the [PinY](#Section_df919a5df7df43c3ab3d0be20347d5ad) Cell\_Type to the y-coordinate.

###### Relative Coordinate System

A relative coordinate system is a [Coordinate System](#Section_99f006f5c67e4e298a19134ae611fd8f) where the coordinates are determined by multiplying a scalar value by the width or height of the [Shape](#Section_2995871af1b144e69754989fb760ee18).

It is used to represent x-coordinate or y-coordinate by the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that has a [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), [RelLineTo](#Section_ee800037097e410babc2ee1a3d9a9876), [RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8) or [RelQuadBezTo](#Section_5ef65107af0d4883a080f721fab64b8d) properties of the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element.

It is also used to represent formula by [E](#Section_99f38d547d8741488fb7b4e1f4347ddf) Cell\_Type element that has a [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a) Row\_Type parent element and [A](#Section_94bd6863691942828646c493b66e84bf) Cell\_Type element that has a [PolylineTo](#Section_fbee463785994947990565fd8fbf6481) Row\_Type parent element.

The width and height are specified by the [Width](#Section_f8906dddccbe43e19655285cb1afff23) and [Height](#Section_3a6641a8217f4a91bb7b0c37e95e1d7f) Cell\_Type elements.

##### Geometry Path

A path is a collection of vertices and line or curve segments that specifies an enclosed area. The geometry of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by a collection of paths.

Each [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) element specifies a path. Each [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element specifies a vertex of that path, a segment of that path, or both.

If the Row\_Type element is of type [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d) or [InfiniteLine](#Section_aa836815e431444aa88e64450e7c5348), it specifies the only segment of the path.

Otherwise, if the Row\_Type element is of type [MoveTo](#Section_c8d4bbc71acd4f058f8ef6cd21a85651) or [RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8), it specifies the first vertex in the path or the first vertex after a break in the path.

Otherwise, the Row\_Type element specifies a vertex and a segment that connects the vertex of the previous Row\_Type element to the vertex specified in the current Row\_Type element.

For a path to be visible, the following conditions are necessary.

* The shape containing the path is not on a [layer](#Section_4a598344a53a40d89e994077ee09d069) whose [Visible](#Section_5ef4de9383ed436383146f688f211e4a) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element has a value equal to zero.
* The value of the [NoShow](#Section_31b6d084165340399921af39e7b87ef9) Cell\_Type child of the path’s Geometry Section\_Type element is not equal to one.

The visibility of the path’s line and the visibility of the path’s fill are specified, respectively, by the [NoLine](#Section_d93f47f5c57c4f7fb8d18783d9479233) and [NoFill](#Section_6e12d295b27d45018838af38f0f8f127) Cell\_Type child elements of the path’s Geometry Section\_Type element.

The [format](#Section_f63759284c0642dda31cbbab14930e93) of the path’s line and the format of the path’s fill are specified, respectively, by the [line propert](#Section_999c6bb7a4f94aadb299d18418fa0ec9)y and [fill propert](#Section_52745b68d28443b9a8f0564732579b99)y of the shape containing the path.

##### Display Order

The display order of [shapes](#Section_2995871af1b144e69754989fb760ee18) in a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) is a strict ordering that is used to determine their [visualization](#Section_b690bcd44466465b938fc0cf7019eb39) behavior. If one shape has a higher position than another in the display order, the former shape is displayed in front of the latter.

If one [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element appears before another ShapeSheet\_Type element in the same [XML Part](#Section_1e2c12b7de5249978c5f82c8143921b7), the shape specified by the latter ShapeSheet\_Type element has a higher position in the display order.

If one shape is a [member shape](#Section_00285724289547c19f2f489ec5da125c) of another shape, the relative positions of the two shapes in the display order are specified by the [DisplayMode](#Section_eb724b9fc1024a37b3a7c8364bee8415) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) of the latter shape.

#### Shape Hierarchy

[Shapes](#Section_2995871af1b144e69754989fb760ee18) can be hierarchically grouped. A shape contains zero or more [subshapes](#Section_00285724289547c19f2f489ec5da125c).

##### Parent

If a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element has a parent [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) element whose parent is a ShapeSheet\_Type element, the [shape](#Section_2995871af1b144e69754989fb760ee18) specified by the latter ShapeSheet\_Type element is called that shape’s parent.

If a ShapeSheet\_Type element has an ancestor Shapes\_Type element whose parent is a ShapeSheet\_Type element, the shape specified by the latter ShapeSheet\_Type element is called an ancestor shape of the shape specified by the former ShapeSheet\_Type element.

##### Top-Level Shape

Top-level shapes are [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) elements that have no ShapeSheet\_Type ancestors. The parent of top-level shapes is the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

##### Subshape

If a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element has a parent [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) element whose parent is a ShapeSheet\_Type element, the [shape](#Section_2995871af1b144e69754989fb760ee18) specified by the former ShapeSheet\_Type element is called a subshape of the shape specified by the latter ShapeSheet\_Type element.

If a ShapeSheet\_Type element has an ancestor Shapes\_Type element whose parent is a ShapeSheet\_Type element, the shape specified by the former ShapeSheet\_Type element is called a member shape of the shape specified by the latter ShapeSheet\_Type element.

#### Shape Selection

[Shape](#Section_2995871af1b144e69754989fb760ee18)s in a [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be selected.

For a shape to be selectable, all the following conditions are necessary.

* The value of the [LockSelect](#Section_270a5a34893b40949126dc355aca4b46) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element of the shape is equal to zero, or value of the ProtectShape Cell\_Type element of the shape is equal to one.
* The shape is not on a [layer](#Section_4a598344a53a40d89e994077ee09d069) whose [Visible](#Section_5ef4de9383ed436383146f688f211e4a) Cell\_Type element has a value equal to zero.
* The shape is not on a layer whose [Lock](#Section_b8e1a8eb2c3d457c88db324b356ffc7a) Cell\_Type element has a value equal to zero.
* None of the [ancestor shapes](#Section_901ceba559e64aba90342042efc1d354) of the shape has a [SelectMode](#Section_8c85558c751b4c2ea992e072cbc0ee47) cell whose value is equal to zero.
* The shape has at least one visible [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) that is not obscured by shapes with a higher [display order](#Section_85de6d6594f449f9bb9f7083aab91184).
* The shape is on a [foreground page](#Section_2b3a03240644467fb822f24e28fa5d11).

#### Shape Hyperlinks

A [shape](#Section_2995871af1b144e69754989fb760ee18) has zero or more hyperlinks associated with it. Hyperlinks point to [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b) within the [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), shapes within the Web drawing, or destinations outside the Web drawing.

The set of hyperlinks associated with a shape is specified by the [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) element.

Each hyperlink is specified by a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of the Hyperlink Section\_Type element for the shape. This Row\_Type element specifies the information about the hyperlink properties using a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. It is either contained under a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for the shape or [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

A collection of Cell\_Type elements that define the properties of the hyperlink is composed of [Description](#Section_bc232ee0e33346a68a9abe1b2cedfe76), [Address](#Section_a0ac651f8574449484fc76e3749d1354), [SubAddress](#Section_f9b7b260c9fe4592baaed684aee9d9e0), [ExtraInfo](#Section_dda5a342b16147d7be92d0f73de3ad9d), [Default](#Section_2a87aa52e80c4780958d1976eed3cdc9), [Invisible](#Section_90e074eb726a43a1884aececfeed0815), and [SortKey](#Section_4ab41b5ea8f54dbd9765c5fb638ba26e) Cell\_Type elements.

#### Shape Data

A [shape](#Section_2995871af1b144e69754989fb760ee18) can have data associated with it that provides information about its meaning. A shape’s data is stored as a set of shape data [**fields**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc).

Each shape data field is specified by a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of the [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) element for the shape. This Row\_Type element specifies the information about the shape data field properties using a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. It is either contained under a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for the shape or it is [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

A collection of Cell\_Type elements that define the properties of the shape data field is composed of [Calendar](#Section_e16f56ae177b42c99db8d423fe9add62), [DataLinked](#Section_51a855ac1f0e4a1caf4301dd43fe126f), [Format](#Section_246c0b5f7ee1437bbc388cd71ba37e81), [Invisible](#Section_90e074eb726a43a1884aececfeed0815), [Label](#Section_0579e0bdb40f43abbfc39d0824541799), [LangID](#Section_360407c534d8417db08d4044fd858a5e), [Type](#Section_6cf3897b0deb4eca92249ca29be35bf4), and [Value](#Section_4919da7a6e944e0b8a77a96f67544087) Cell\_Type elements.

The name of a shape data field is specified by the **N** attribute of the Row\_Type element for the field. The value of a shape data field is specified by the Value Cell\_Type element. The data type of a shape data field is specified by the Type Cell\_Type element.

### Master

Masters specify [shape](#Section_2995871af1b144e69754989fb760ee18)s that can be reused throughout a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

A shape on a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) can be linked to a master, which can affect various properties of the shape including its visual appearance. A relationship to such a master is called [master-to-shape inheritance](#Section_7442861798334d73aa7ff3a6f043a12d).

#### Master Identification

A master is specified by the combination of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element in a [Masters XML Part](#Section_ac2cee21ca0e459b85e335908a476f70), and the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) elements in the [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11) specified by the Master\_Type element’s [Rel\_Type](#Section_34f54be6adb24aa8a6837d1db7a25d46) child element. These ShapeSheet\_Type elements are called master shapes.

The following elements in other [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) of the document have attributes that reference masters.

* A ShapeSheet\_Type element in a [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a) can specify with its **Master** attribute the master it inherits from.
* The [Use](#Section_baa06b88433f4e3093dac8a5b870e6b9) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) accepts as its argument the name or [**GUID**](#gt_f49694cc-c350-462d-ab8e-816f0103c6c1) of a master.
* The [MasterSheetRef](#Section_435b2f8945b145ceb36b1b89c7862cd8) [reference token](#Section_a5d209e86bf34212acb3509df1b76d7d) references a master.

### Sheet

A sheet is a collection of properties that specify information for a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), style, or [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

#### Sheet Identification

A [sheet](#Section_fd48786aaeee44ce84b100884dc31200) for a [shape](#Section_2995871af1b144e69754989fb760ee18) is a collection of [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) contained in a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element in a [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a). A sheet for a shape is uniquely identified by the **ID** attribute in a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) element.

A sheet for a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) is a collection of sections, rows, and cells contained in a ShapeSheet\_Type element in a [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). A sheet for a master is uniquely identified by the **UniqueID** attribute in a Shapes\_Type element.

A sheet for a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) is a collection of sections, rows, and cells contained in a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element in a [Masters XML Part](#Section_ac2cee21ca0e459b85e335908a476f70) or [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3). A sheet for a drawing page is uniquely identified by the **ID**, **Name,** and **NameU** attributes in a [Pages\_Type](#Section_cc5285664612436aa8e614d376f5d8a6) element. A sheet for a drawing page is unique in a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) or [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element.

A sheet for a style is a collection of sections, rows, and cells contained in a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) element in a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). A sheet for a style is uniquely identified by the **ID** attribute in a [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) element.

A sheet for a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is a collection of sections, rows, and cells contained in a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) element in a Document XML Part. A sheet for a Web drawing is unique in a [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79) element.

#### Sheet Types

A [sheet](#Section_fd48786aaeee44ce84b100884dc31200) is specified by a [Sheet\_Type](#Section_8187d7a229874248810eb304b36a9669) abstract complex type. A sheet in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be one of four distinct types that extend the Sheet\_Type. The distinct types are [shape sheet](#Section_58fee8aeb28d46668b78dacb48217060), [page sheet](#Section_63494c43b4cd4a0c93ef16620eb13da7), [style sheet](#Section_b01703e4a485477d9128e93a52880888), and document sheet (section [2.2.5.2.1](#Section_5fec1d1bc18a47eab37cd1055f870538)).

##### Document Sheet

A document sheet specifies information pertaining to a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It is a collection of [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) child element of the [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79) element in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71).

##### Page Sheet

A page sheet specifies information pertaining to a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). It is a collection of [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) contained in a [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3) or [Masters XML Part](#Section_ac2cee21ca0e459b85e335908a476f70). Each page sheet is specified by a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) child element of a [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) child element of a [Pages\_Type](#Section_cc5285664612436aa8e614d376f5d8a6) element in either a Pages XML Part or PageSheet\_Type child element of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) child element of a [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122) element in a Masters XML Part.

##### Shape Sheet

A shape sheet specifies information pertaining to a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5).

A shape sheet pertaining to a shape in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is a collection of [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) contained in a [Page\_XML\_Part](#Section_1f15c8f06565465caefd2be6af545e8a). Each shape sheet is specified by a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of a [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

A shape sheet pertaining to a master in a web drawing is a collection of sections, rows, and cells contained in a [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each shape sheet is specified by a ShapeSheet\_Type child element of a Shapes\_Type descendant element of a [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

##### Style Sheet

A style sheet specifies information pertaining to a style and is used in [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

A style sheet in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is a collection of [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) contained in a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each style sheet is specified by a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of the [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

###### Root Style Sheet

The root style sheet is a [style sheet](#Section_b01703e4a485477d9128e93a52880888) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) that all other style sheets [inherit](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) from.

The root style sheet is specified by the [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) element whose **ID** attribute value is equal to zero and whose **NameU** attribute value is equal to "No Style".

#### Sheet Structures

A sheet structure is where the property information of a [sheet](#Section_fd48786aaeee44ce84b100884dc31200) has been hierarchically grouped into [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a).

##### Section

A section specifies a collection of related properties of a [sheet](#Section_fd48786aaeee44ce84b100884dc31200). A section contains [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) and [rows](#Section_d74a66b474714467b154ea4f60de7fdd).

Sections are specified by [Section\_Type](#Section_735b599d1359476785931c508a885779) child elements of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), and [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) elements. The **N** attribute of a Section\_Type element specifies the name of the section that identifies the collection of properties that it pertains to. The properties specified by a section are specified by the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) and [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child elements of the Section\_Type element.

##### Row

A row specifies a subset of the properties in a [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b). A row contains [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a).

Rows are specified by [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child elements of the [Section\_Type](#Section_735b599d1359476785931c508a885779) child elements of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), and [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) elements. The **N** attribute of a Row\_Type element specifies the name of the row that identifies the subset of properties that it pertains to. The properties specified by a row are specified by the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the Row\_Type element.

##### Cell

A cell specifies a single property in a [row](#Section_d74a66b474714467b154ea4f60de7fdd), [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), or [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

Cells are specified by [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the [Section\_Type](#Section_735b599d1359476785931c508a885779), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), and [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) elements. The **N** attribute of a Cell\_Type element specifies the name of the cell that identifies the property that it pertains to.

The **V** attribute of a Cell\_Type element specifies the value of the property of the cell. The **F** attribute of a Cell\_Type element specifies the [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) of the property of the cell.

If the **F** attribute is present, the value of the property is used until it is replaced by a value from the most recent [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) that does not result in an [error value](#Section_ef7736101a5d4e8cb030c33fcff78419).

###### Cell Default Values

The property value assigned to a missing or malformed cell is called a cell default value. If the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element of a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is not specified directly in a [sheet](#Section_fd48786aaeee44ce84b100884dc31200) or through [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb), the cell is called a missing cell. If the Cell\_Type element of a cell in a web drawing does not specify a **V** attribute, the cell is called a malformed cell.

The cell default value of a missing cell depends on its [parse token](#Section_003704de9b914a79a32046dac55d7e28), [custom structure](#Section_3f16ca44878a412da22a6ead5979310c), or [custom token grouping](#Section_e1dd43853d0c435ea7459a585a0bb919). The cell default value for parse tokens and custom structures is specified in the following table. Where the default value for all the parse tokens in a custom token grouping is the same, the custom token grouping is specified in the table instead of individual parse tokens.

| Parse token, custom structure, or custom token grouping | Cell default value |
| --- | --- |
| [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) | 0.00 |
| [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) | 0 |
| [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) | "" |
| [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) | 0 |
| [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) | #000000 |
| [PtgShort](#Section_f7b9155c4ceb4742bdf4db90e2d5220c) | 0 |
| [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) | 0.00 days |
| [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) | 0 |
| [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62) | 0 |
| [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822) | 0.00 inches |
| [vLanguageString](#Section_f91b1356cff14c718a04247007cbe4c9) | "" |
| [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) | "0" |
| [vAny](#Section_4a97b6616cca49a7911670b57c9379d2) | 0.00 days |
| [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) | 0.00 radians |
| [vLength](#Section_f809c3999b1c4a688984764d079d153c) | 0.00 inches |
| [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) | #000000 |
| [vFormatString](#Section_ff39e94802a4435596e662456c2a775f) | "" |

The cell default value of a malformed cell depends on the **U** attribute value of its Cell\_Type element. If the **U** attribute of the Cell\_Type element of a malformed cell is not specified, the cell default value is specified in the previous table.

If the **U** attribute of the Cell\_Type element of a malformed cell is specified, the cell default value is specified in the following table.

| U attribute value | Cell default value |
| --- | --- |
| AC | 0.00 inches |
| DEG | 0.00 radians |
| DA | 0.00 radians |
| AD | 0.00 radians |
| RAD | 0.00 radians |
| BOOL | 0 |
| COLOR | #000000 |
| CY | 0.00 |
| DATE | 0.00 |
| ED | 0.00 days |
| EH | 0.00 days |
| EM | 0.00 days |
| ES | 0.00 days |
| EW | 0.00 days |
| HA | 0.00 inches |
| CM | 0.00 inches |
| DL | 0.00 inches |
| FT | 0.00 inches |
| F\_I | 0.00 inches |
| IN | 0.00 inches |
| IN\_F | 0.00 inches |
| KM | 0.00 inches |
| M | 0.00 inches |
| MI | 0.00 inches |
| MI\_F | 0.00 inches |
| MM | 0.00 inches |
| NM | 0.00 inches |
| PER | 0.00 |
| YD | 0.00 inches |
| DP | 0.00 inches |
| PNT | PNT(0.00, 0.00) |
| STR | "" |
| DE | 0.00 days |
| C\_D | 0.00 inches |
| C | 0.00 inches |
| D | 0.00 inches |
| DT | 0.00 inches |
| P | 0.00 inches |
| P\_PT | 0.00 inches |
| PT | 0.00 inches |

#### Inheritance

This section describes how properties are inherited in [sheets](#Section_fd48786aaeee44ce84b100884dc31200) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

##### Master-to-Shape Inheritance

A [shape](#Section_2995871af1b144e69754989fb760ee18) on a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) can be linked to a [master](#Section_04e031963af24a52bd32ef5d79b9efc5), which can affect various properties of the shape including its visual appearance. A relationship to such a master is called master-to-shape inheritance, and the shape is called an instance of that master. A shape has zero or one master-to-shape inheritance relationships.

If the **Master** attribute of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element of a shape on a drawing page is equal to the **ID** attribute of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element of a master, the shape is an instance of the master. Any [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a), or [subshapes](#Section_00285724289547c19f2f489ec5da125c) not specified in the instance are inherited from the master.

An instance can modify the sections, rows, and cells taken on from [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) by specifying [local properties](#Section_ddb86d42056a431f8575cd1accfe63d5). In addition, if an instance contains a subshape whose ShapeSheet\_Type element has a **MasterShape** attribute that matches the **ID** attribute of a subshape of the master, the local properties specified in this subshape will override those of the corresponding subshape in the master.

If a master has one [top-level shape](#Section_a662815dc0c445eb8c722f12f1e28088), a shape that inherits from that master inherits the descendant elements of that master shape. If a master has more than one master shape, a shape that inherits from that master inherits those master shapes as subshapes.

##### Style-to-Shape Inheritance

[Shape](#Section_2995871af1b144e69754989fb760ee18)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be linked to a style, which can affect various properties of the shape including its visual appearance. A relationship to such a style is called style-to-shape inheritance. A style-to-shape inheritance allows a shape to take on properties from the style it inherits from. A shape can have zero to three style-to-shape inheritance relationships.

The style-to-shape inheritances in a web drawing are specified by the [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a). Each style-to-shape inheritance is specified by the attributes of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of the [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7). Style-to-shape inheritance information is specified by the ShapeSheet\_Type element and a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of a [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71).

If the **LineStyle**, **FillStyle**, and **TextStyle** attributes of the ShapeSheet\_Type element are empty, a style-to-shape inheritance is not specified. If the **LineStyle**, **FillStyle**, or **TextStyle** attributes of the ShapeSheet\_Type element are not empty, a style-to-shape inheritance exists individually for each attribute between the ShapeSheet\_Type element and the StyleSheet\_Type element whose **ID** attribute value is equal to the value of a **LineStyle**, **FillStyle**, or **TextStyle** attribute of the ShapeSheet\_Type element.

The **LineStyle**, **FillStyle**, and **TextStyle** attributes of a ShapeSheet\_Type element each specify a set of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the StyleSheet\_Type element as specified in the following table.

| Attribute | Cell\_Type elements |
| --- | --- |
| **LineStyle** | Specifies Cell\_Type elements related to [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) except for Cell\_Type child elements of a [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) [Section\_Type](#Section_735b599d1359476785931c508a885779). |
| **FillStyle** | Specifies Cell\_Type elements related to [fill properties](#Section_52745b68d28443b9a8f0564732579b99) and [effect properties](#Section_eef94b47f838406e8de5203e0204794a) including Cell\_Type child elements of a FillGradient Section\_Type. |
| **TextStyle** | Specifies Cell\_Type elements related to [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff). |

##### Style-to-Master Inheritance

[Masters](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be linked to a style, which can affect various properties of the master including its visual appearance. A relationship to such a style is called style-to-master inheritance. A style-to-master inheritance allows a master to take on properties from the style it inherits from. A master can have zero to three style-to-master inheritance relationships.

The style-to-master inheritances in a web drawing are specified by the [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each style-to-master inheritance is specified by the attributes of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of the [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7). Style-to-master inheritance information is specified by the ShapeSheet\_Type element and a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of a [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71).

If the **LineStyle**, **FillStyle**, and **TextStyle** attributes of the ShapeSheet\_Type element are empty, a style-to-master inheritance is not specified. If the **LineStyle**, **FillStyle**, or **TextStyle** attributes of the ShapeSheet\_Type element are not empty, a style-to-master inheritance exists individually for each attribute between the ShapeSheet\_Type element and the StyleSheet\_Type element whose **ID** attribute value is equal to the value of a **LineStyle**, **FillStyle**, or **TextStyle** attribute of the ShapeSheet\_Type element.

The **LineStyle**, **FillStyle**, and **TextStyle** attributes of a ShapeSheet\_Type element each specify a set of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the StyleSheet\_Type element as specified in the table found in section [2.2.5.4.2](#Section_59214758549c4f99a4dede2bf5fb08d3).

##### Style-to-Style Inheritance

Styles in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be linked to other styles, which can affect various properties of the style. A relationship to such a style is called style-to-style inheritance. A style-to-style inheritance allows a [style sheet](#Section_b01703e4a485477d9128e93a52880888) to take on properties from the style it inherits from. A style can have zero to three style-to-style inheritance relationships.

The style-to-style inheritances in a web drawing are specified by the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each style-to-style inheritance is specified by the attributes of a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of the [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7). Style-to-style inheritance information is specified by the StyleSheet\_Type element and other StyleSheet\_Type elements in the Document XML Part.

If the **LineStyle**, **FillStyle**, and **TextStyle** attributes of the StyleSheet\_Type element are empty, a style-to-style inheritance is not specified. If the **LineStyle**, **FillStyle**, or **TextStyle** attributes of the StyleSheet\_Type element are not empty, a style-to-style inheritance exists individually for each attribute between the StyleSheet\_Type element and another StyleSheet\_Type element whose **ID** attribute value is equal to the value of a **LineStyle**, **FillStyle**, or **TextStyle** attribute of the StyleSheet\_Type element.

The **LineStyle**, **FillStyle**, and **TextStyle** attributes of a StyleSheet\_Type element each specify a set of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the StyleSheet\_Type element as specified in the table found in section [2.2.5.4.2](#Section_59214758549c4f99a4dede2bf5fb08d3).

##### Theme Inheritance

A [shape](#Section_2995871af1b144e69754989fb760ee18) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) takes on the [format](#Section_f63759284c0642dda31cbbab14930e93) properties specified by its [dynamic theme components](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) and [quick style slices](#Section_f9af4781844f4b14b4b615e5b3c3319e) through [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). Format properties from the [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) are represented as a dynamic theme [style sheet](#Section_b01703e4a485477d9128e93a52880888) that is linked to from other style sheets, [master](#Section_04e031963af24a52bd32ef5d79b9efc5)s, and shapes. A relationship to a dynamic theme style sheet is called theme inheritance.

Theme inheritance allows a style sheet, master, or shape to take on properties from the [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) of the dynamic theme style sheet it inherits from. These inheritances in a web drawing are specified as [style-to-shape inheritance](#Section_59214758549c4f99a4dede2bf5fb08d3), [style-to-master inheritance](#Section_9182479e37d84aa09c5cfb3922b0957c), and [style-to-style inheritance](#Section_64509af3e3934ac19474949c50d4b06f).

A dynamic theme style sheet in a web drawing is specified by a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of the [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). A dynamic theme style sheet is uniquely identified by a StyleSheet\_Type element whose **NameU** attribute is equal to "Theme".

##### Local Properties

[Sheets](#Section_fd48786aaeee44ce84b100884dc31200) corresponding to styles, [master](#Section_04e031963af24a52bd32ef5d79b9efc5)s, and [shape](#Section_2995871af1b144e69754989fb760ee18)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify that their own properties replace properties taken on from [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). These properties are called local properties.

Local properties are specified by [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), or [Section\_Type](#Section_735b599d1359476785931c508a885779) descendant elements of [Sheet\_Type](#Section_8187d7a229874248810eb304b36a9669) elements. A local property replaces the properties of an inherited Cell\_Type, Row\_Type, or Section\_Type element, if the value of the local property’s **N** attribute is equal to the value of the **N** attribute of the inherited Cell\_Type, Row\_Type, or Section\_Type element.

#### Sheet Extensibility

Sheet extensibility is a mechanism whereby a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) specifies extensions to the rules about [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b)s, [rows](#Section_d74a66b474714467b154ea4f60de7fdd), [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a), and [function tokens](#Section_71b8cdb618854fa2a75016d6626054f4) as defined in this specification. Such extensions are specified in [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348), [RowDef\_Type](#Section_0faaad04825a462da95588741883745c), [CellDef\_Type](#Section_54c859c5a4004f699a66cffab531a6d3), and [FunctionDef\_Type](#Section_a535a1b0612d43afb5c76aaa0d00d794) descendant elements of the [Extensions](#Section_741970fc73db4ab298d82d30e31d5357) element of the [Extensions XML Part](#Section_3e96bff898904591b5779670479e8cc0).

The valid **N** attributes of a [Section\_Type](#Section_735b599d1359476785931c508a885779) element are specified in section [2.4.1](#Section_ae0d39d7aa9a4a5d9c51ea0feb34e00f). However, SectionDef\_Type elements can specify additional valid **N** attributes.

The valid **N** attributes of a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element and the locations where a Cell\_Type element with a given **N** attribute can occur are specified in section [2.4.4](#Section_c31ebb48e79243088bc0ebcba281ce20). However, CellDef\_Type elements can specify additional valid **N** attributes. Additionally, a CellDef\_Type element specifies the valid locations where a CellDef\_Type element with a given **N** attribute can occur, based on the CellDef\_Type element’s ancestor SectionDef\_Type and RowDef\_Type elements. Cells defined through sheet extensibility are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

The valid function tokens are specified in section [2.5.3](#Section_841b28f1ba4a46fb9034a9d51de6e0f9). However, FunctionDef\_Type elements can specify additional valid function tokens. A function token defined through sheet extensibility consumes all argument, and returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #VALUE!.

### Image

A [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can have [**embedded images**](#gt_c2dd082b-6519-49a2-99e9-77b671621249). Each embedded image is associated with a [shape](#Section_2995871af1b144e69754989fb760ee18), which provides information about the image placement, size, and properties.

The [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element of a shape that specifies an image MUST have its **Type** attribute equal to "Foreign" and MUST have a [ForeignData\_Type](#Section_c5a5df0c02e64e729042d5766f614cf5) child element.

The ShapeSheet\_Type element specifies the position, width, and height of the image using the [ImgOffsetX](#Section_d7a28dc8ad984dc4bce24883fb26bc63), [ImgOffsetY](#Section_898839b6e87c4acbaa7ef7b1a985747d), [ImgWidth](#Section_d3ed55a5ced4406bb8f7a70144c394d8), and [ImgHeight](#Section_7765dbdb838445e39000ccab7f8d044e) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements.

The ShapeSheet\_Type element specifies image formatting properties using the [Blur](#Section_39837340fa0d41c5b0b652581d473976), [Brightness](#Section_e691beaff4ca4f65af651878e6c1b4a4), [Contrast](#Section_393bb37432a6480c8cfc2be6a38ad9f0), [Denoise](#Section_f47864640d954b89899979580d4ce375), [Gamma](#Section_379cf257d87b4a8eb93ecee0eb25431c), and [Sharpen](#Section_de0408621a0b4bf18549bbb771350d53), and [Transparency](#Section_4bb0233d21284513bc0e1dec37496286) Cell\_Type child elements.

Additional image properties, such as format and compression, are specified by attributes of the ForeignData\_Type child element. This element MUST have a [Rel\_Type](#Section_34f54be6adb24aa8a6837d1db7a25d46) child element that specifies an explicit [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) to another [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7). The following embedded image formats are supported:

* [**bitmap (BMP)**](#gt_15997d30-1146-484b-bedb-1453466718de)
* [**enhanced metafile format (EMF)**](#gt_d9d0bff9-d270-4528-9081-fe51db809c36)
* [**Graphics Interchange Format (GIF)**](#gt_ee8059ce-b978-451e-a0cd-33fa7fbb5845)
* [**Joint Photographic Experts Group (JPEG)**](#gt_5eda1f18-8071-4b27-ab0f-07f1fb79199d)
* [**Portable Network Graphics (PNG)**](#gt_212c87ce-40ba-4311-be2a-494f1a116604)
* [**TIFF**](#gt_eddadea9-c278-4d16-9279-f222df2cb735)

For these formats, the Rel\_Type child element of the ForeignData\_Type element MUST specify an [Image](#Section_949e69ecfcd64ca0be82c30421c1f9a0) part that contains the embedded image.

Other embedded image formats and [**embedded objects**](#gt_708607be-8655-416e-93f3-b434e9ecbd56) are supported using [fallback images](#Section_df1d23b86a304991bfeb062f265ab5a1).

#### Fallback Image

If an Image Part (section [2.3.3.5](#Section_949e69ecfcd64ca0be82c30421c1f9a0)) that is in a format that is not supported (section [2.2.6](#Section_c7915a6e1cd84633ad57261c2da081ae)) has a [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) to another Image part that is in a supported format, the latter Image part is called a fallback image and is rendered in place of the former. Otherwise, neither Image part is rendered.

### Format

A format is a collection of properties that affect the visual appearance of [shape](#Section_2995871af1b144e69754989fb760ee18)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

#### Fill Properties

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can possess a variety of properties relating to the visual appearance of fills in closed [geometry paths](#Section_1b69f6b831d44b28bc3770ee4956d8cb). A collection of properties defining the visual appearance of a shape, master, or style’s fill is called a fill property. Each shape, master, or style has one fill property.

Fill properties allow a shape, master, or style to take on a variety of fill styles, including full transparency, solid colors, gradients, and patterns. These properties can be combined with a [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9) and an [effect property](#Section_eef94b47f838406e8de5203e0204794a).

The fill properties of shapes in a web drawing are specified in the [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a). Each fill property is specified in a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of the [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

The fill properties of masters in a web drawing are specified in the [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each fill property is specified in a ShapeSheet\_Type child element of the Shapes\_Type descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

The fill properties of styles in a web drawing are specified in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each fill property is specified in a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of the [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a part.

Fill property information in shapes, masters, and styles is specified by the [FillForegnd](#Section_50d71b31d16e42739b9da19e2dfa6e09), [FillForegndTrans](#Section_444b828fd3da4f06b7ec6c0387ca2a3a), [FillBkgnd](#Section_8c3d69f7de4a47bea209e25e69ea785a), [FillBkgndTrans](#Section_9d6512e0dca049f6afc6df12931c8fc8), [FillPattern](#Section_1cd3d15cff2842118c41844affbe30ed), [FillGradientDir](#Section_e19c498a52774add99538b85cb2af250), [FillGradientAngle](#Section_0ed91a89215241c4a2636821e3fa77ff), [FillGradientEnabled](#Section_ea4b40d27ffc4d1d8801757265752543), [RotateGradientWithShape](#Section_1d24b5af4cf44513a40617ad4895c292), and [UseGroupGradient](#Section_1a823cd4cf594248b78486e06430c3b4)[Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements, and the Cell\_Type elements belonging to the [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) [Section\_Type](#Section_735b599d1359476785931c508a885779).

#### Line Properties

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can possess a variety of properties relating to the visual appearance of lines. A collection of properties defining the visual appearance of a shape, master, or style’s line is called a line property. Each shape, master, or style has one line property.

Line properties allow a shape, master, or style to take on a variety of line styles, including full transparency, solid colors, gradients, and strokes. These properties can be combined with a [fill property](#Section_52745b68d28443b9a8f0564732579b99) and an [effect property](#Section_eef94b47f838406e8de5203e0204794a).

The line properties of shapes in a web drawing are specified in the [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a). Each line property is specified in a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of the [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

The line properties of masters in a web drawing are specified in the [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each line property is specified in a ShapeSheet\_Type child element of the Shapes\_Type descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

The line properties of styles in a web drawing are specified in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each line property is specified in a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of the [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a part.

Line property information in shapes, masters, and styles is specified by the [LineColor](#Section_1ad2684e7fc94cb2857979c3107099f2), [LinePattern](#Section_f718c50060664fcc8b664bb5015f133f), [LineWeight](#Section_358e71950fb34e338b39b801d79d84a0), [LineCap](#Section_b08a8361c0c14d5f89156810bcedfbc3), [BeginArrow](#Section_8f7d58be20e0433b841959add0650616), [EndArrow](#Section_d1e61c8bf576429da425447b39935496), [LineColorTrans](#Section_8d14aed205d146a5a3ce7f65c4837773), [CompoundType](#Section_fcd4d7f70582471dbf20a9fdea902696), [BeginArrowSize](#Section_9ea88ec87a3e4ea69caaa823f50f0707), [EndArrowSize](#Section_c6eef25a120041e5b838f9211941a34f), [Rounding](#Section_378bccccbf8446e8a63a0f9881f84ac2), [LineGradientDir](#Section_7e14c089e4914335899f45549724854e), [LineGradientAngle](#Section_0c7abcd3bc604fb6839140bb63100aac), and [LineGradientEnabled](#Section_c02f26b3c37d4fdca4272999c81c08d9) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements, and the Cell\_Type elements belonging to the [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) [Section\_Type](#Section_735b599d1359476785931c508a885779).

#### Effect Properties

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can possess a variety of properties relating to effects which can affect the visual appearance of the web drawing. Each distinct effect is called an effect set. A collection of properties defining the effect sets of a shape, master, or style is called an effect property. Each shape, master, or style has one effect property consisting of distinct effect sets.

Effect properties allow a shape, master, or style to take on a variety of distinct effect sets, including shadows, bevels, glows, reflections, soft edges, sketch, and 3D rotation. These properties can be combined with a [fill property](#Section_52745b68d28443b9a8f0564732579b99) and a [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9).

The effect properties of shapes in a web drawing are specified in the [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a). Each effect property is specified in a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of the [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

The effect properties of masters in a web drawing are specified in the [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each effect property is specified in a ShapeSheet\_Type child element of the Shapes\_Type descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

The effect properties of styles in a web drawing are specified in the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each effect property is specified in a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of the [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a part.

##### Shadow Effect Set

A shadow effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on one of a variety of shadows as cast by light sources of different orientations and brightness. It can be combined with other distinct effect sets. Each shape, master, or style has at most one shadow effect set.

Shadow effect set information in shapes, masters, and styles is specified by the [ShdwForegnd](#Section_16a4f382fe564f9f9d15415eb076612d), [ShdwForegndTrans](#Section_7d07c7a152f3491ba133c5ef2dcd051c), [ShdwPattern](#Section_4bcd0eaf60c84710b955a5fd7158b860), [ShapeShdwType](#Section_2130e5954335461a8a75528ad207cab9), [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259), [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2), [ShapeShdwObliqueAngle](#Section_169b07fe9c0f403284df725ea631f73f), [ShapeShdwScaleFactor](#Section_1d6cff997a864e8db19d2c1829e2f282), and [ShapeShdwBlur](#Section_da304ad0e12b4225a95e36572c787c7b) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

Shadow effect set information is partially specified in the Cell\_Type elements [ShdwType](#Section_cb0058409e4a41a9a53f72bd5b1d58a7), [ShdwOffsetX](#Section_d5df1f51922a418995ba4a4bfa7631b6), [ShdwOffsetY](#Section_5835fe653c33455c8ac855af7da45f48), [ShdwObliqueAngle](#Section_b118340e0b3a40b9a6a269801bbcbdc1), and [ShdwScaleFactor](#Section_dbac447debc943cd9b435978c54907e0), in [page sheets](#Section_63494c43b4cd4a0c93ef16620eb13da7).

###### Shadow Distance

The Euclidean distance between the point specified by the x and y coordinates of a [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) and its origin is called a shadow distance.

The x-coordinate of a shadow effect set applied to a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style is specified by the [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element. The y-coordinate of a shadow effect set applied to a shape, master, or style is specified by the [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2) Cell\_Type element.

The x-coordinate of a shadow effect set applied to a [page sheet](#Section_63494c43b4cd4a0c93ef16620eb13da7) is specified by the [ShdwOffsetX](#Section_d5df1f51922a418995ba4a4bfa7631b6) Cell\_Type element. The y-coordinate of a shadow effect set applied to a page sheet is specified by the [ShdwOffsetY](#Section_5835fe653c33455c8ac855af7da45f48) Cell\_Type element.

###### Page Default Shadow

The parts of a [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) specified in [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements in a [page sheet](#Section_63494c43b4cd4a0c93ef16620eb13da7) are called a page default shadow. A shadow effect set of a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style can be partially specified by the page default shadow specified in the page sheet of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) that the shape, master, or style resides on.

If the value of the structure of a [ShapeShdwType](#Section_2130e5954335461a8a75528ad207cab9) Cell\_Type element in a shape, master, or style is zero, the values of the structures of the ShapeShdwType, [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259), [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2), [ShapeShdwObliqueAngle](#Section_169b07fe9c0f403284df725ea631f73f), and [ShapeShdwScaleFactor](#Section_1d6cff997a864e8db19d2c1829e2f282) Cell\_Type elements of the shape, master, or style are specified by the page default shadow during rendering. These elements are not modified.

The values of the structures of Cell\_Type elements of a page sheet relating to a page default shadow specify the values of the structures of Cell\_Type elements of a shape, master, or style relating to a shadow effect set according to the following table:

| Page sheet Cell\_Type elements | Shape, master, or style Cell\_Type elements |
| --- | --- |
| [**ShdwType**](#Section_cb0058409e4a41a9a53f72bd5b1d58a7) | ShapeShdwType |
| [**ShdwOffsetX**](#Section_d5df1f51922a418995ba4a4bfa7631b6) | ShapeShdwOffsetX |
| [**ShdwOffsetY**](#Section_5835fe653c33455c8ac855af7da45f48) | ShapeShdwOffsetY |
| [**ShdwObliqueAngle**](#Section_b118340e0b3a40b9a6a269801bbcbdc1) | ShapeShdwObliqueAngle |
| [**ShdwScaleFactor**](#Section_dbac447debc943cd9b435978c54907e0) | ShapeShdwScaleFactor |

##### Bevel Effect Set

A bevel effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on three-dimensional sloping edges of various types on its top and bottom faces. It can be combined with other distinct effect sets. Each shape, master, or style has at most one bevel effect set.

Bevel effect set information in shapes, masters, and styles is specified by the [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0), [BevelTopWidth](#Section_903a8d7c15a14efa9e8d68933d64e7de), [BevelTopHeight](#Section_0614ed0e76a7400a955dff1766769c54), [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f), [BevelBottomWidth](#Section_e6761a85ceb140c29d8ebd38f87ec85d), [BevelBottomHeight](#Section_5951a333278a4cedac1473e4a4050596), [BevelDepthColor](#Section_64e1d9dff532458e91666e77702938f4), [BevelDepthSize](#Section_101ee2fa5d32429ba191ce7c96c7d411), [BevelContourColor](#Section_02cefb0379404adf9d2c670e8b1932c1), [BevelContourSize](#Section_a362bb43b6ea48f09f48b4224a44b211), [BevelMaterialType](#Section_339e96d50bd946d39a3054b93adb3457), [BevelLightingType](#Section_f34790153f9c43b1a7106b55e2c79f83), and [BevelLightingAngle](#Section_aca57aa548b7464eaba5a44ea5d370a1) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

##### Glow Effect Set

A glow effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on a colored, blurred outline surrounding the outer edges of the shape, master, or style. It can be combined with other distinct effect sets. Each shape, master, or style has at most one glow effect set.

Glow effect set information in shapes, masters, and styles is specified by the [GlowColor](#Section_a8ef555afe054a6083827ce580f49202), [GlowColorTrans](#Section_0a7e9d86f52143f0b8a1d86a41ff33b0), and [GlowSize](#Section_acb99b53189d4d65a92f7239171c2f0b) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

##### Reflection Effect Set

A reflection effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on a duplicate image of its self, reflected across its bottom edge. Transparency and blur can be applied to the duplicate image to convey the reflective properties of various surfaces. A reflection effect set can be combined with other distinct effect sets. Each shape, master, or style has at most one reflection effect set.

Reflection effect set information in shapes, masters, and styles is specified by the [ReflectionSize](#Section_25ae2a5a2f2f40adb59af410000414d7), [ReflectionTrans](#Section_54ac8196234b463e8ea84646d5044cb0), [ReflectionDist](#Section_dd2a36036ffb47f98f47c6cf866f069d), and [ReflectionBlur](#Section_3a1cfddd550e410c953802bd092d7114) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

##### Soft Edges Effect Set

A soft edges effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on a blur affecting its outer edges. It can be combined with other distinct effect sets. Each shape, master, or style has at most one soft edges effect set.

Soft edges effect set information in shapes, masters, and styles is specified by the [SoftEdgesSize](#Section_768a404663c742cf8f3d11f85a275235) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element.

##### Sketch Effect Set

A sketch effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on a less polished appearance as if drawn by hand. It cannot be combined with other distinct effect sets. Each shape, master, or style has at most one sketch effect set.

Sketch effect set information in shapes, masters, and styles is specified by the [SketchEnabled](#Section_a434c9a2c2e3478b95b97a5170331148), [SketchSeed](#Section_84bf006a52754948a90d5e25320c80b4), [SketchAmount](#Section_ef519b3920ed481c87572ca63854a67b), [SketchLineWeight](#Section_f413e8f6ad9e41e4b2f916ab32cd14c1), [SketchLineChange](#Section_a0005aaa67814606995746b07d65972c), and [SketchFillChange](#Section_2990c30ac2b7492d89c6f4184f344739) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

A sketch effect set renders a new [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) for a shape, master, or style’s fill and distorts both the shape, master, or style’s geometry path and the fill’s geometry by rendering each path segment with randomized perturbations. The [geometry section](#Section_c6f4364f5fb749f3993e49d4d709aa02) of the shape, master, or style is not modified.

The value of the structure of a SketchSeed Cell\_Type element is used to randomize path segment perturbations in both the geometry path and the fill’s geometry. If the value of the structure of a SketchSeed Cell\_Type element is equivalent for shapes, masters, or styles with identical geometry paths, the shapes, masters, or styles render identical sketch effect sets.

If a sketch effect set is active on a shape, master, or style, other effect sets do not render.

##### 3D Rotation Effect Set

A 3D rotation effect set allows a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style to take on rotations in the z-axis and perspective rotations. A 3D rotation effect set can be combined with other distinct effect sets. Each shape, master, or style has at most one 3D rotation effect set.

3D rotation effect set information in shapes, masters, and styles is specified by the [RotationXAngle](#Section_08fa7c04b96646789f09b76a1df592b3), [RotationYAngle](#Section_8a7b03b455fa4e1b9d694d20e5d0ab05), [RotationZAngle](#Section_50581d6788e54401be6cbf2ebfc1bb4b), [RotationType](#Section_de4f428ac2f845c6b9a417a2218653a5), [Perspective](#Section_236817b975174d4abdba8c4f0071045f), [DistanceFromGround](#Section_04af4beaf104430d8bf650e145a79a54), and [KeepTextFlat](#Section_4bb6066f045b4e9d8f8888792b262156) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

#### Dynamic Theme

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify pre-defined, dynamic sets of properties which can affect its visual appearance. A set of pre-defined, dynamic properties specified in this manner is called a dynamic theme.

A dynamic theme defines properties that specify properties for color, font, [fill](#Section_52745b68d28443b9a8f0564732579b99), [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9), and [effect](#Section_eef94b47f838406e8de5203e0204794a). The properties of a dynamic theme are separated into five distinct groupings called [dynamic theme components](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26). A unique set of properties is specified by the combination of the five dynamic theme components. A shape, master, or style specifies distinct dynamic theme components from one or more dynamic themes.

The specified dynamic theme components of a shape, master, or style define more properties than the shape, master, or style can visually express at any one time. A shape, master, or style further specifies subsets of properties which actively affect its visual appearance from its specified dynamic theme components. These subsets of properties are called a quick style.

A quick style defines seven distinct subsets of properties from a shape, master, or style’s specified dynamic theme components. A subset is called a [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). The combination of the specified quick style slices and the specified dynamic theme components directly determines the visual appearance of the shape, master, or style.

A dynamic theme defines four distinct sets of pre-defined properties used to indirectly specify the values of properties in quick style slices in a shape, master, or style in a Web drawing. A set is called a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575).

##### Dynamic Theme Components

A [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) defines properties that specify color, font, [fill](#Section_52745b68d28443b9a8f0564732579b99), [line](#Section_999c6bb7a4f94aadb299d18418fa0ec9), and [effect](#Section_eef94b47f838406e8de5203e0204794a). It is composed of multiple parts as specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.6.9 and this specification.

The properties of a dynamic theme are grouped into five distinct dynamic theme components that are specified in the following table.

| Dynamic theme component | Description | Location |
| --- | --- | --- |
| Color scheme | Specifies a set of twelve color properties, as specified in [ISO/IEC29500-1:2016] section 20.1.6.2, and one additional color property extension, as specified in [ISO/IEC29500-1:2016] section 18.2.10. | Specified by a **clrScheme** child element as specified by the **CT\_ColorScheme** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.2) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a [CT\_OfficeStyleSheet](#Section_5c86236387dc41d490d0a892bf545fdf) element in a [Theme\_XML\_Part](#Section_24711011cb574f6d8de85b95ac64f40a). |
| Font scheme | Specifies a set of six font properties, as specified in [ISO/IEC29500-1:2016] section 20.1.4.1.18. | Specified by a **fontScheme** child element as specified by the **CT\_FontScheme** type (specified in [ISO/IEC29500-1:2016] section 20.1.4.1.18) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| Effect scheme | Specifies a set of six [quick style slices](#Section_f9af4781844f4b14b4b615e5b3c3319e) of fill, line, and effect properties, as specified in [ISO/IEC29500-1:2016] section 20.1.4.1.14. These [formats](#Section_f63759284c0642dda31cbbab14930e93) are used in [non-connector](#Section_21a8f47c40324f1c912c1476cba071c0) [shapes](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5)s, and styles. | Specified by an **fmtScheme** child element as specified by the **CT\_StyleMatrix** type (specified in [ISO/IEC29500-1:2016] section 20.1.4.1.14) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part.  Additional line properties and [sketch effect set](#Section_a26dd56967ed4c30a435191752e08e9a) information are specified by [CT\_LineStyle](#Section_2df8e78693624739a3542be2d2a6c377) child elements of a [CT\_SchemeLineStyles](#Section_127f9a08970b4a148f145d85e372685f) child element of a [CT\_LineStyles](#Section_31d1cb6777cc4277bdb032072f9d68d5) child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part.  Additional font information is specified by [CT\_FontProps](#Section_577dc0c30b234354a2fd91cf5eb85d4c) child elements of a [CT\_FontStyles](#Section_81028a97719a45eea8c5488378c5a000) child element of a [CT\_FontStylesGroup](#Section_850ef476f82a4a8a9e06b92196699e39) child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| Connector scheme | Specifies a set of six quick style slices of fill, line, and effect properties, as specified in [ISO/IEC29500-1:2016] section 20.1.4.1.14. These formats are used in connector shapes, masters, and styles. | Specified by an **fmtConnectorScheme** child element as specified by the **CT\_StyleMatrix type** (specified in [ISO/IEC29500-1:2016] section 20.1.4.1.14) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part.  Additional line properties and sketch effect set information are specified by CT\_LineStyle child elements of a CT\_SchemeLineStyles child element of a CT\_LineStyles child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part.  Additional font information is specified by CT\_FontProps child elements of a CT\_FontStyles child element of a CT\_FontStylesGroup child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| Primary scheme | Used in formula evaluation only. | Specified by a [CT\_ThemeScheme](#Section_530218d622c849fab0002a442bd2194d) child element of a CT\_LineStyles child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an extLst child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |

The additional complex types in the following table that are not specified in [ISO/IEC29500-1:2016] partially specify a dynamic theme.

The additional complex types that partially specify a dynamic theme and are not specified in [ISO/IEC29500-1:2016] are listed in the following table.

| Complex Type | Description |
| --- | --- |
| [CT\_LineEx](#Section_738d7ff8fdf2486fba869242c8814cc1) | Specifies line properties information in an effect or connector scheme dynamic theme component. |
| [CT\_Sketch](#Section_141f797d86764d15beb3c5d3ed276ea9) | Specifies sketch effect set information in an effect or connector scheme dynamic theme component. |
| [CT\_SchemeID](#Section_c4fad8770c01403aaee826a0a46851c1) | Specifies the index of a color, font, effect, connector or primary scheme dynamic theme component, or the GUID of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) dynamic theme component. |
| CT\_LineStyle | Specifies line properties and sketch effect set information in an effect or connector scheme dynamic theme component. |
| CT\_LineStyles | Specifies a set of line properties and sketch effect set information in an effect and connector scheme dynamic theme component. |
| CT\_ThemeScheme | Specifies the primary scheme dynamic theme component. |
| [CT\_FmtSchemeEx](#Section_93fe6e0c6e3b46b596850e8d55373b75) | Specifies the index of an effect scheme dynamic theme component or a connector scheme dynamic theme component. |
| CT\_SchemeLineStyles | Specifies a set of line properties and sketch effect set information in an effect or connector scheme dynamic theme component. |
| CT\_FontProps | Specifies properties used to format a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). |
| CT\_FontStyles | Specifies a set of properties used to format a text run. |
| CT\_FontStylesGroup | Specifies the properties used to format a text run in shapes. |
| [CT\_VarClrScheme](#Section_2607c298d88146179138cb89177a37cf) | Specifies a color scheme list of a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575). |
| [CT\_VariationClrSchemeLst](#Section_031d022c328840d4a3e9679a6e6a927b) | Specifies four distinct color scheme lists of four distinct dynamic theme variants in a dynamic theme. |
| [CT\_VariationStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) | Specifies a style property of a style scheme list of a dynamic theme variant. |
| [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) | Specifies a style scheme list of a dynamic theme variant. |
| [CT\_VariationStyleSchemeLst](#Section_5bec143bb68248aa89c8d9545b604624) | Specifies four distinct style scheme lists of four distinct dynamic theme variants in a dynamic theme. |

##### Dynamic Theme Identification

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify distinct [dynamic theme components](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26).

The dynamic theme components used in a shape are specified in the [Page\_XML\_part](#Section_1f15c8f06565465caefd2be6af545e8a). Each dynamic theme component is specified by a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

The dynamic theme components used in a master are specified in the [Master XML part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each dynamic theme component is specified by a Cell\_Type child element of a ShapeSheet\_Type child element of a Shapes\_Type descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

The dynamic theme components used in a style are specified in the [Document XML part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each dynamic theme component is specified by a Cell\_Type child element of a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of a [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a part.

The location of a dynamic theme component in a shape, master, or style is specified in the following table.

| Dynamic theme components | Location |
| --- | --- |
| Color scheme | For a shape or master, the color scheme is specified by a [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, specified by a ColorSchemeIndex Cell\_Type child element of a StyleSheet\_Type element. |
| Font scheme | For a shape or master, the color scheme is specified by a [FontSchemeIndex](#Section_9d9c7fe007aa4245864799073a835ebc) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, specified by a FontSchemeIndex Cell\_Type child element of a StyleSheet\_Type element. |
| Effect scheme | For a shape or master, the effect scheme is specified by an [EffectSchemeIndex](#Section_2117ea2ac6e941d0a6a86b46d9042ae6) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the effect scheme is specified by an EffectSchemeIndex Cell\_Type child element of a StyleSheet\_Type element. |
| Connector scheme | For a shape or master, the connector scheme is specified by a [ConnectorSchemeIndex](#Section_9753d977a1de49e8888ccf532efe7982) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the connector scheme is specified by a ConnectorSchemeIndex Cell\_Type child element of a StyleSheet\_Type element. |
| Primary scheme | For a shape or master, the primary scheme is specified by a [ThemeIndex](#Section_524e63d4ec9c42eaa1368d63b339dd2b) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the primary scheme is specified by a ThemeIndex Cell\_Type child element of a StyleSheet\_Type element. |

##### Quick Style Slices

Quick style slices define properties that specify color, font, [fill](#Section_52745b68d28443b9a8f0564732579b99), [line](#Section_999c6bb7a4f94aadb299d18418fa0ec9), and [effect properties](#Section_eef94b47f838406e8de5203e0204794a) that directly affect the visual appearance of a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style. These properties are subsets of the properties provided by the [dynamic theme components](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) specified by the shape, master, or style, and are grouped into the seven distinct quick style slices specified in the following table.

| Quick style slice | Description |
| --- | --- |
| Line matrix | Specifies one of the six quick style slices of line properties from the effect scheme dynamic theme component for [non-connector](#Section_21a8f47c40324f1c912c1476cba071c0) shapes, masters or styles, or from the connector scheme dynamic theme component for connector shapes, masters or styles. |
| Fill matrix | Specifies one of the six quick style slices of fill properties from the effect scheme dynamic theme component for non-connector shapes, masters or styles, or from the connector scheme dynamic theme component for connector shapes, masters or styles. |
| Effect matrix | Specifies one of the six quick style slices of effect properties from the effect scheme dynamic theme component for non-connector shapes, masters or styles, or from the connector scheme dynamic theme component for connector shapes, masters or styles. |
| Font matrix | Specifies one of six quick style slices of fonts for the font scheme dynamic theme component for shapes, masters, or styles. |
| Line color | Specifies one of nine colors from the color scheme dynamic theme component. |
| Fill color | Specifies one of nine colors from the color scheme dynamic theme component. |
| Shadow color | Specifies one of nine colors from the color scheme dynamic theme component. |
| Font color | Specifies one of nine colors from the color scheme dynamic theme component. |

##### Quick Style Identification

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify distinct [quick style slices](#Section_f9af4781844f4b14b4b615e5b3c3319e).

The quick style slices of a shape are specified in the [Page\_XML\_part](#Section_1f15c8f06565465caefd2be6af545e8a). Each quick style slice is specified by a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

The quick style slices of a master are specified in the [Master XML part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each quick style slice is specified by a Cell\_Type child element of a ShapeSheet\_Type child element of a Shapes\_Type descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

The quick style slices of a style are specified in the [Document XML part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each quick style slice is specified by a Cell\_Type child element of a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of a [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a part.

The location of a quick style slice in a shape, master, or style is specified in the following table.

| Quick style slices | Location |
| --- | --- |
| Line matrix | For a shape or master, the line matrix is specified by a [QuickStyleLineMatrix](#Section_edfd9f33fea34bf58cd5a91a3d677b03) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the line matrix is specified by a QuickStyleLineMatrix Cell\_Type child element of a StyleSheet\_Type element. |
| Fill matrix | For a shape or master, the fill matrix is specified by a [QuickStyleFillMatrix](#Section_25689058b1e74d3ca8330a4c7180f5f2) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the fill matrix is specified by a QuickStyleFillMatrix Cell\_Type child element of a StyleSheet\_Type element. |
| Effect matrix | For a shape or master, the effect matrix is specified by a [QuickStyleEffectsMatrix](#Section_92238d7b5ecc48ed8f2f5dc577a4a11c) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the effect matrix is specified by a QuickStyleEffectsMatrix Cell\_Type child element of a StyleSheet\_Type element. |
| Font matrix | For a shape or master, the font matrix is specified by a [QuickStyleFontMatrix](#Section_14da1dc4afde4cc58670956687bc8c14) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the font matrix is specified by a QuickStyleFontMatrix Cell\_Type child element of a StyleSheet\_Type element. |
| Line color | For a shape or master, the line color is specified by a [QuickStyleLineColor](#Section_0e75e2f9a6ad4e4797453f5d132688fe) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the line color is specified by a QuickStyleLineColor Cell\_Type child element of a StyleSheet\_Type element. |
| Fill color | For a shape or master, the fill color is specified by a [QuickStyleFillColor](#Section_723529ce4ac3416db7be362aa28be341) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the fill color is specified by a QuickStyleFillColor Cell\_Type child element of a StyleSheet\_Type element. |
| Shadow color | For a shape or master, the shadow color is specified by a [QuickStyleShadowColor](#Section_3b9cd611489e4632bd5ec8d0aeb2b044) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the shadow color is specified by a QuickStyleShadowColor Cell\_Type child element of a StyleSheet\_Type element. |
| Font color | For a shape or master, the font color is specified by a [QuickStyleFontColor](#Section_9ea47e333be3453980c1a70ac0d4d768) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, the font color is specified by a QuickStyleFontColor Cell\_Type child element of a StyleSheet\_Type element. |

A [QuickStyleType](#Section_550dd5fb238841c9867d3a8af03c94b8) Cell\_Type element of a shape, master, or style specifies whether the QuickStyleLineMatrix, QuickStyleFillMatrix, and QuickStyleEffectsMatrix Cell\_Type elements of the shape, master, or style refer to the effect or connector scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) regardless of whether the shape, master, or style is a [connector](#Section_21a8f47c40324f1c912c1476cba071c0).

##### Dynamic Theme Variants

A dynamic theme (section [2.2.7.4](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9)) variant defines properties used to indirectly specify the values of properties in [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e)s.

A dynamic theme variant defines properties used to indirectly specify the value of the structure of the [QuickStyleLineMatrix](#Section_edfd9f33fea34bf58cd5a91a3d677b03), [QuickStyleFillMatrix](#Section_25689058b1e74d3ca8330a4c7180f5f2), [QuickStyleEffectsMatrix](#Section_92238d7b5ecc48ed8f2f5dc577a4a11c), [QuickStyleLineColor](#Section_0e75e2f9a6ad4e4797453f5d132688fe), [QuickStyleFillColor](#Section_723529ce4ac3416db7be362aa28be341), [QuickStyleShadowColor](#Section_3b9cd611489e4632bd5ec8d0aeb2b044), [QuickStyleFontColor](#Section_9ea47e333be3453980c1a70ac0d4d768), and [QuickStyleFontMatrix](#Section_14da1dc4afde4cc58670956687bc8c14) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements of a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). A dynamic theme variant also specifies [embellishment](#Section_3109f5643c584956b2d17995824f5343) and multiformat information.

The properties of a dynamic theme variant are specified in the following table.

| [Dynamic](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) theme variant property | Description | Location |
| --- | --- | --- |
| Color scheme list | Specifies a set of seven color properties used to indirectly specify the value of the structure of the QuickStyleLineColor, QuickStyleFillColor, QuickStyleShadowColor, and QuickStyleFontColor Cell\_Type elements of a shape, master, or style in a Web drawing.  Specifies multiformat information. | Specified by a [CT\_VarClrScheme](#Section_2607c298d88146179138cb89177a37cf) child element of a [CT\_VariationClrSchemeLst](#Section_031d022c328840d4a3e9679a6e6a927b) child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **CT\_ColorScheme** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.2) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a [CT\_OfficeStyleSheet](#Section_5c86236387dc41d490d0a892bf545fdf) element in a [Theme\_XML\_Part](#Section_24711011cb574f6d8de85b95ac64f40a).  Each color property is specified by a **srgbClr** child element as specified by the **CT\_SRGBClr** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.3.32) of a **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VarClrScheme element. |
| Style scheme list | Specifies a set of four style properties used to indirectly specify the value of the structure of the QuickStyleLineMatrix, QuickStyleFillMatrix, QuickStyleEffectsMatrix, and QuickStyleFontMatrix Cell\_Type elements of a shape, master, or style in a Web drawing.  Specifies embellishment information. | Specified by a [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) child element of a [CT\_VariationStyleSchemeLst](#Section_5bec143bb68248aa89c8d9545b604624) child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part.  Each style property is specified by a [CT\_VariationStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) child element of a CT\_VariationStyleScheme type. |

##### Dynamic Theme Variants Identification

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify distinct [dynamic theme variants](#Section_79aed9f85d10403891067d1927fa0575).

The dynamic theme variants used in a shape are specified in the [Page\_XML\_part](#Section_1f15c8f06565465caefd2be6af545e8a). Each dynamic theme variant is specified by a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of a [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

The dynamic theme variants used in a master are specified in the [Master XML part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11). Each dynamic theme variant is specified by a Cell\_Type child element of a ShapeSheet\_Type child element of a Shapes\_Type descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

The dynamic theme variants used in a style are specified in the [Document XML part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each dynamic theme variant is specified by a Cell\_Type child element of a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) child element of a [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) child element of the [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a part.

The location of the properties of a dynamic theme variant in a shape, master, or style is specified in the following table.

| Dynamic theme variant property | Location |
| --- | --- |
| Color scheme list | For a shape or master, the color scheme list is specified by a [VariationColorIndex](#Section_9c1ff24f6cee4bf5ba8d5b065a1b589c) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, specified by a VariationColorIndex Cell\_Type child element of a StyleSheet\_Type element. |
| Style scheme list | For a shape or master, the style scheme list is specified by a [VariationStyleIndex](#Section_60a354271d64466aa9cf35e12a05d760) Cell\_Type child element of a ShapeSheet\_Type element.  For a style, specified by a VariationStyleIndex Cell\_Type child element of a StyleSheet\_Type element. |

##### Dynamic Theme Functions

The properties specified by a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) of a shape (section [2.2.3](#Section_2995871af1b144e69754989fb760ee18)), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style are referenced through two [function token](#Section_71b8cdb618854fa2a75016d6626054f4)s persisted in [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The [ThemeVal](#Section_7f01db8e32d540df966f70cc1eeb9225) function token, when called without argument, returns the property value from the dynamic theme for the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element that it resides in directly without invoking [theme inheritance](#Section_9c650d6d38064e3db76ead30b20f237a). The ThemeVal function token, when called with an argument, returns the property value from the dynamic theme specified by the argument directly without invoking theme inheritance.

The [ThemeProp](#Section_bd72b8b3fbf74463ad23cd8a5cc4acfd) function token accepts an argument to retrieve the [multiformat](#Section_3109f5643c584956b2d17995824f5343) and embellishment property values from a dynamic theme (section 2.2.7.4) as specified by the argument.

##### Custom Dynamic Theme Color Scheme

The set of color properties [in](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) can be specified by a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) instead of a color scheme dynamic theme component. A set of color properties specified in this manner is called a custom dynamic theme color scheme.

The set of color property values in a custom dynamic theme color scheme is specified by the [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the [msvThemeDarkColor](#Section_376445b0db934bbd986119b0c759cb66), [msvThemeLightColor](#Section_4fa79777c7c34053b22da4a81d714247), [msvThemeAccentColor](#Section_6b7f706cf33c4a39ac68d1387092ea3c), [msvThemeAccentColor2](#Section_18b26f1d113940ec8e0d5e712b21b5c3), [msvThemeAccentColor3](#Section_994ba3a975594aab9eb4b7c1e281e79c), [msvThemeAccentColor4](#Section_89be958d5dde4f41881453db81b51ebc), [msvThemeAccentColor5](#Section_1146180ac84c4cbba51553d499740152), [msvThemeAccentColor6](#Section_eb94319282a34a098aa2a21a5b465ad2) and [msvThemeBackgroundColor](#Section_0b9a3fda1e0c4949b356f044fce86c8b) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child elements of a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) [Section\_Type](#Section_735b599d1359476785931c508a885779) element descendant of a [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element of a master.

A custom dynamic theme color scheme is specified by a [CT\_SchemeID](#Section_c4fad8770c01403aaee826a0a46851c1) child element of a **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) in a [Theme\_XML\_part](#Section_24711011cb574f6d8de85b95ac64f40a).

If the value of the **schemeEnum** attribute of the CT\_SchemeID element is equal to 65535 and the value of the **schemeGUID** attribute of the CT\_SchemeID element is equal to the value of the **UniqueID** attribute of the [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) child element of a [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122) element in the [Masters XML part](#Section_ac2cee21ca0e459b85e335908a476f70), the custom dynamic theme color scheme is specified by the master with the matching **UniqueID** attribute.

##### Connector

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be either a connector or a non-connector in terms of a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

If a shape, master, or style [inherits](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) from a [style sheet](#Section_b01703e4a485477d9128e93a52880888) whose **NameU** attribute value is equal to "Connector", the shape, master, or style is a connector; otherwise, the shape, master, or style is a non-connector.

##### Embellishment and Multiformat

A [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575) of a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) specifies two [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse tokens that are used in [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. One is called **embellishment**, and the other is called **multiformat**.

If the value of the structure of the [EmbellishmentIndex](#Section_5e6c02dda3fc400ea202cb96d39709ac) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element of a shape is equal to 0, embellishment is specified by the value of the **embellishment** attribute of a [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) child element, specified by the [VariationStyleIndex](#Section_60a354271d64466aa9cf35e12a05d760) Cell\_Type element of a shape, of a [CT\_VariationClrSchemeLst](#Section_031d022c328840d4a3e9679a6e6a927b) child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a [CT\_OfficeStyleSheet](#Section_5c86236387dc41d490d0a892bf545fdf) element in a [Theme\_XML\_Part](#Section_24711011cb574f6d8de85b95ac64f40a). Otherwise, embellishment is specified by the value of the structure of the EmbellishmentIndex Cell\_Type element.

Multiformat is specified by the value of the **monotone** attribute of a [CT\_VariationClrScheme](#Section_2607c298d88146179138cb89177a37cf) child element, specified by the [VariationColorIndex](#Section_9c1ff24f6cee4bf5ba8d5b065a1b589c) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18), of a CT\_VariationClrSchemeLst child element of an **ext** child element as specified by the **CT\_OfficeArtExtension** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.14) of an **extLst** child element as specified by the **CT\_OfficeArtExtensionList** type (specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15) of a **CT\_ColorScheme** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.2) of a **themeElements** child element as specified by the **CT\_BaseStyles** type (specified in [ISO/IEC29500-1:2016] section 20.1.6.10) of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part.

#### Fixed Theme

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify pre-defined, fixed sets of properties which can affect its visual appearance. A set of pre-defined, fixed properties specified in this manner is called a fixed theme.

A fixed theme defines properties that specify color, font, [fill](#Section_52745b68d28443b9a8f0564732579b99), [line](#Section_999c6bb7a4f94aadb299d18418fa0ec9), and [effect properties](#Section_eef94b47f838406e8de5203e0204794a). The properties of a fixed theme are separated into two groupings: a fixed color scheme and a fixed effect scheme. A shape, master, or style specifies a fixed theme by specifying a fixed color scheme and a fixed effect scheme.

The set of property values in a fixed color scheme is specified by the [vThemeColor](#Section_086b805c6a154d258e8da691ae277673) custom structure. The set of property values in a fixed effect scheme is specified by the [vThemeEffect](#Section_feb16a5f63d442e4aaf73ea74cabef81) custom structure.

A fixed color scheme is specified by the [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of an [msvThemeColors](#Section_92c3ad6f52524b8686d3d1245bfeb9aa) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) [Section\_Type](#Section_735b599d1359476785931c508a885779) element in a shape, master, or style. A fixed effect scheme is specified by the Value Cell\_Type child element of an [msvThemeEffects](#Section_db573c68ea8c410a9b0e6639b6975a51) Row\_Type child element of a User Section\_Type element in a shape, master, or style.

A [Theme](#Section_0bb5ca51f92a4e2a8ba6baceba0de879) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) returns the property values from the set of properties specified by a fixed color scheme and a fixed effect scheme of a shape, master, or style.

##### Custom Fixed Color and Effect Schemes

The set of property values specified by a fixed color scheme or a fixed effect scheme can be specified by a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) instead of a [vThemeColor](#Section_086b805c6a154d258e8da691ae277673) or [vThemeEffect](#Section_feb16a5f63d442e4aaf73ea74cabef81) custom structure. A fixed color scheme of this description is called a custom fixed color scheme. A fixed effect scheme of this description is called a custom fixed effect scheme. A [shape](#Section_2995871af1b144e69754989fb760ee18), master, or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify a custom fixed color scheme in place of a fixed color scheme and/or a custom fixed effect scheme in place of a fixed effect scheme.

The set of property values in a custom fixed color scheme is specified by the [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of the [msvThemeTextColor](#Section_bb624eb0e8ad4cad942f1e959719832f), [msvThemeFillColor](#Section_a5fd9cbdc664434f82ba0ab1dc7961b0), [msvThemeFillColor2](#Section_fc01333e29c14e169c44d5f398dcd1d1), [msvThemeLineColor](#Section_38449cb8c3c84b6b937d33605b07274c), [msvThemeConnectorColor](#Section_f55c8ba80f7144a0951066acfb4fca00), [msvThemeShadowColor](#Section_76570074110d4ba1a6419c9af7617892), [msvThemeAccentColor](#Section_6b7f706cf33c4a39ac68d1387092ea3c), [msvThemeAccentColor2](#Section_18b26f1d113940ec8e0d5e712b21b5c3), [msvThemeAccentColor3](#Section_994ba3a975594aab9eb4b7c1e281e79c), [msvThemeAccentColor4](#Section_89be958d5dde4f41881453db81b51ebc), [msvThemeAccentColor5](#Section_1146180ac84c4cbba51553d499740152), and [msvThemeBackgroundColor](#Section_0b9a3fda1e0c4949b356f044fce86c8b) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child elements of a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) [Section\_Type](#Section_735b599d1359476785931c508a885779) element in a master.

The set of property values in a custom fixed effect scheme is specified by the Value Cell\_Type child elements of the [msvThemeLatinFont](#Section_741bf00d899a49bd8d1096a3fa12cfd9), [msvThemeAsianFont](#Section_766f42f976144df6a459f9d378bd83e1), [msvThemeComplexFont](#Section_eae75efd57a04167938548a4c474371e), [msvThemeLineTransparency](#Section_fcce68bfc6894d8696c5e297e13d1a13), [msvThemeLineWeight](#Section_239e767c84814baa8ca23a3b668a1a71), [msvThemeLinePattern](#Section_e22d5c093d7345d281ef0478079f39c8), [msvThemeLineRounding](#Section_c93b72aaac88457591498a052e3d3e3f), [msvThemeConnectorTransparency](#Section_f426ebf41cf84d0e9f7d4ac449fcd029), [msvThemeConnectorPattern](#Section_bde2caad445045d6884dff6a1edd9141), [msvThemeConnectorWeight](#Section_78e5ac31881d4e0baabe55743daa4a91), [msvThemeConnectorRounding](#Section_0fcce4c7d975404ea14bd4e9352646fc), [msvThemeConnectorBegin](#Section_8a47c7cc2e544b50bfea39f3daa00487), [msvThemeConnectorEnd](#Section_ab09e9a8b83640aba11cff0718e4aa63), [msvThemeConnectorEnd2](#Section_e01798aa284a44a7ac9474b09d2a14c6), [msvThemeConnectorBeginSize](#Section_109bf3376a5c4cfba41d131517dbcfa4), [msvThemeConnectorEndSize](#Section_833c928f84844f9ba12e3a8ee0729963), [msvThemeFillTransparency](#Section_2996966b80764a0fbd1225fa735bb56a), [msvThemeFillPattern](#Section_2183b6b4fcf74c2a820cc16d788fea4a), [msvThemeShadowTransparency](#Section_4cfb494808564b3aabfea8216423e63f), [msvThemeShadowPattern](#Section_4ab3434714c1448fb0a46ee140f1f4a5), [msvThemeShadowStyle](#Section_b6dfcd7abec74dfcba1d92aeb6b3ab7c), [msvThemeShadowXOffset](#Section_db539770a7994ded86a4ce526c6b470b), [msvThemeShadowYOffset](#Section_1cf427c028844e3fbef9f23020197996), [msvThemeShadowMagnification](#Section_5261a2b66d6e4ccc9be5912b2cfd47ac), and [msvThemeShadowDirection](#Section_572deea256e74e30980408e736cd6ce9) Row\_Type child elements of a User Section\_Type element in a master.

A custom fixed color scheme is specified by the Value Cell\_Type child element of an [msvThemeColors](#Section_92c3ad6f52524b8686d3d1245bfeb9aa) Row\_Type child element of a User Section\_Type element in a shape, master, or style. If the **V** attribute of the Value Cell\_Type element is equal to 254 and the argument of the [USE](#Section_baa06b88433f4e3093dac8a5b870e6b9) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) of the **F** attribute of the Value Cell\_Type element is equal to the **UniqueID** attribute of the master specified by the [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) child element of a [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122) element in the [Masters XML part](#Section_ac2cee21ca0e459b85e335908a476f70), the custom fixed color scheme of the shape, master, or style is specified by the master.

A custom fixed effect scheme is specified by the Value Cell\_Type child element of an [msvThemeEffects](#Section_db573c68ea8c410a9b0e6639b6975a51) Row\_Type child element of a User Section\_Type element in a shape, master, or style. If the **V** attribute of the Value Cell\_Type element is equal to 254 and the argument of the USE function token of the **F** attribute of the Value Cell\_Type element is equal to the **UniqueID** attribute of a master specified by the Master\_Type child element of a Masters\_Type element in the Masters XML Part, the custom fixed effect scheme of the shape, master, or style is specified by the master.

A [Theme](#Section_0bb5ca51f92a4e2a8ba6baceba0de879) function token returns the property values from the set of properties specified by a custom fixed color scheme and/or a custom fixed effect scheme of a shape, master, or style.

#### Color Table

A color value in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be specified as either a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token or an unsigned long integer.

If a color value specified as an unsigned long integer is greater than or equal to zero and less than or equal to 23, the [color-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) of the specified color is specified by the following table.

| Unsigned Long Integer | Color-value |
| --- | --- |
| 0 | #000000 |
| 1 | #FFFFFF |
| 2 | #FF0000 |
| 3 | #00FF00 |
| 4 | #0000FF |
| 5 | #FFFF00 |
| 6 | #FF00FF |
| 7 | #00FFFF |
| 8 | #800000 |
| 9 | #008000 |
| 10 | #000080 |
| 11 | #808000 |
| 12 | #800080 |
| 13 | #008080 |
| 14 | #C0C0C0 |
| 15 | #E6E6E6 |
| 16 | #CDCDCD |
| 17 | #B3B3B3 |
| 18 | #9A9A9A |
| 19 | #808080 |
| 20 | #666666 |
| 21 | #4D4D4D |
| 22 | #333333 |
| 23 | #1A1A1A |

If a color value specified as an unsigned long integer is greater than 23, the [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) value of the specified color is specified by a [ColorEntry\_Type](#Section_e2bf0659fdaa400ba27e7f0995389235) child element of a [Colors\_Type](#Section_235d2b6231ad4aa99a2e9789a6a6de30) child element of a [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a [Document XML part](#Section_7ec3d7b00de24711a7b692daa2020d71). If the value of an **IX** attribute of a ColorEntry\_Type element is equal to the specified unsigned long integer, the RGB value of the specified color is equal to the **RGB** attribute specified by the ColorEntry\_Type element.

#### Font Table

A font table specifies the [**fonts**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) used in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It is specified by a [FaceNames\_Type](#Section_f6b0e8dcfa2648bd812a937da904b562) child element of a [VisioDocument](#Section_99b55522415b402aaec875b956562728) element in a [Document XML part](#Section_7ec3d7b00de24711a7b692daa2020d71). Each font is specified by a [FaceName\_Type](#Section_56d67fa7f07c43389eef3343b2cb1c7f) child element of the FaceNames\_Type element.

A [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style specifies its fonts using the [Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5), [AsianFont](#Section_18e2f228bed14e60b64eb2517e657c13), and [ComplexScriptFont](#Section_51cdec724a7644a292617ea906fd32b4) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. If the value of the **V** attribute of a Font, AsianFont, or ComplexFont Cell\_Type element of a shape, master, or style is equal to the value of the **NameU** attribute of a FaceName\_Type element, the shape, master, or style specifies the font specified by the FaceName\_Type element.

#### Custom Pattern

A fill, line, or line end in a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be specified by a master. A fill, line, or line end specified in this way is called a custom pattern.

Custom patterns are specified by a [Masters XML part](#Section_ac2cee21ca0e459b85e335908a476f70). Each custom pattern is specified in a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) child element of a [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7). The **PatternFlags** attribute of a Master\_Type element specifies the type and behavior of the custom pattern.

The visual appearance of a custom pattern is specified by the shapes in the [Master XML part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11) that corresponds to the master. Each shape is specified by a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) child element of the [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) descendant element of the [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element in a part.

A shape, master, or style in a web drawing specifies a custom pattern according to the following table.

| Custom pattern | Description |
| --- | --- |
| [Fill](#Section_d5df1f51922a418995ba4a4bfa7631b6) | [Spe](#Section_2130e5954335461a8a75528ad207cab9)cified by a [FillPattern](#Section_1cd3d15cff2842118c41844affbe30ed) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element whose **V** attribute value is equal to 254. If the argument of the [USE](#Section_baa06b88433f4e3093dac8a5b870e6b9) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) of the **F** attribute of the FillPattern Cell\_Type element is equal to the **NameU** attribute of a master specified by a Master\_Type element, the shape, master or style specifies a fill custom pattern specified by a Master\_Type element. |
| [Line](#Section_cb0058409e4a41a9a53f72bd5b1d58a7) | Specified by a [LinePattern](#Section_f718c50060664fcc8b664bb5015f133f) Cell\_Type element whose **V** attribute value is equal to 254. If the argument of the USE function token of the **F** attribute of the LinePattern Cell\_Type element is equal to the **NameU** attribute of a master specified by a Master\_Type element, the shape, master, or style specifies a line custom pattern specified by a Master\_Type element. |
| Line end | Specified by a [BeginArrow](#Section_8f7d58be20e0433b841959add0650616) or [EndArrow](#Section_d1e61c8bf576429da425447b39935496) Cell\_Type element whose **V** attribute value is equal to 254. If the argument of the USE function token of the **F** attribute of the BeginArrow or EndArrow Cell\_Type element is equal to the **NameU** attribute of a master specified by a Master\_Type element, the shape, master, or style specifies a line end custom pattern specified by a Master\_Type element. |

#### Data Formatting

The [text field](#Section_511cd5d9640846e4b16b42d513a07558) or [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify a format that affects the visual appearance of its [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc). Formatting specified in this manner is called a data format.

##### Text Field Data Formatting

The [text field](#Section_511cd5d9640846e4b16b42d513a07558) in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify a data format that affects the visual appearance of its [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) that is used in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553).

A text field data format is specified in a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) element in a shape or master. Each data format is specified by a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of the Field Section\_Type element. A [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of the Row\_Type element specifies a value to be formatted. A [Format](#Section_246c0b5f7ee1437bbc388cd71ba37e81) Cell\_Type child element of the Row\_Type element specifies the data format to apply to the value specified by its sibling Value Cell\_Type.

The **V** attribute of the Format Cell\_Type element is a [vFormatString](#Section_ff39e94802a4435596e662456c2a775f) custom structure that specifies the data format information designating how the value is displayed.

##### Shape Data Formatting

The [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can specify a data format that affects the visual appearance of its shape data [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc).

The shape data formats are specified in a [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) element in a shape or master. The data format for a shape data field is specified by its corresponding [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of the Property Section\_Type element. A [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of the Row\_Type element specifies a shape data field value to be formatted.

The **V** attribute of the Value Cell\_Type element specifies the shape data field value. A [Type](#Section_6cf3897b0deb4eca92249ca29be35bf4) Cell\_Type child element of the Row\_Type element specifies the type of shape data field value that is stored in its sibling Value Cell\_Type element. The **V** attribute of the Type Cell\_Type element is a [vDataType](#Section_36ab75e38cec42c2a46a009dfd8c21b2) custom structure that specifies the shape data field value type. A [Format](#Section_246c0b5f7ee1437bbc388cd71ba37e81) Cell\_Type child element of the Row\_Type element specifies the data format to apply to shape data field value specified by its sibling Value Cell\_Type. The **V** attribute of the Format Cell\_Type element is a [vFormatString](#Section_ff39e94802a4435596e662456c2a775f) custom structure that specifies the data format information designating how the shape data field value is displayed.

### Text

A [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) can contain text that is specified by one or more [**text runs**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). The text runs associated with a shape are specified by the contents of a [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836) element contained in the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element of the shape. The characters in a text run can be specified explicitly or can be a reference to a [text field](#Section_511cd5d9640846e4b16b42d513a07558).

A text run has characters and properties of [character](#Section_c5dd283696ad47959dc458db5ab84015), [paragraph](#Section_949ea5ce9d7d4a16b51e9587ea795eab), and [tabs](#Section_7ae7864a00ec483d9391508c764ba856) specified as follows:

* Character properties are specified by [cp\_Type](#Section_a8b6f1ba88f847eb8e5efb5045026efa) elements.
* Paragraph properties are specified by [pp\_Type](#Section_c5fb07ebdda243698f5264b47b6805e4) elements.
* Tabs properties are specified by [tp\_Type](#Section_166dcd016b8840448c35e21cb12e2066) elements.
* Text fields are specified by [fld\_Type](#Section_fa12e060338c4c998d41571ed75eade8) elements.

The content of a Text\_Type element is composed of the text characters associated with the shape, interspersed with cp\_Type, pp\_Type, tp\_Type, and fld\_Type elements.

The beginning of a text run on a shape is specified by a Text\_Type, cp\_Type, pp\_Type, or tp\_Type element.

#### Character Properties

The [cp\_Type](#Section_a8b6f1ba88f847eb8e5efb5045026efa) element in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) specifies the beginning of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) and the set of character properties used for the text run. These character properties are used until the end of the [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836) element, or until another cp\_Type element specifies new character properties.

The cp\_Type element specifies the index of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is contained in a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) element. This Row\_Type element specifies the information about the character properties using a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. It is either contained under the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for the shape or it is [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

A collection of Cell\_Type elements that define the character properties are composed of [AsianFont](#Section_18e2f228bed14e60b64eb2517e657c13), [Case](#Section_54760757e99e4c2d9c56c215bd18ff5a), [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc), [ColorTrans](#Section_4b03b138a65641b4bc0d6028359096cf), [ComplexScriptFont](#Section_51cdec724a7644a292617ea906fd32b4), [ComplexScriptSize](#Section_b6f7381dd8b8491fbbc58e1dd49f95e2), [DblUnderline](#Section_610c9764bbe64da0b7239c7520580f0b), [DoubleStrikethrough](#Section_97b6dcbd5ceb4626b3df044191a70af5), [Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5), [FontScale](#Section_de9543b4227c40cfbf264dad9056122c), [LangID](#Section_360407c534d8417db08d4044fd858a5e), [Letterspace](#Section_bc3b37f1cc04415fbffaef04e004cf5a), [Overline](#Section_d68a13dfe7564a84ae04de9b84f8c6fb), [Pos](#Section_fa0bb48943a947bf96e360d5b780a777), [Size](#Section_d905a600d3c94f5181d83f51117ebbc4), [Strikethru](#Section_74eb7e63e1b34064917d80fd4ddfcb5f), and [Style](#Section_a87e85eecf764e0ba09e638c871c28e2) Cell\_Type elements.

#### Paragraph Properties

The [pp\_Type](#Section_c5fb07ebdda243698f5264b47b6805e4) element in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) specifies the beginning of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) and the set of paragraph properties used for the text run. These paragraph properties are used until the end of the [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836) element, or until another pp\_Type element specifies new paragraph properties.

The pp\_Type element specifies the index of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is contained in a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) element. This Row\_Type element specifies the information about the paragraph properties using a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. It is either contained under the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for the shape or it is [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

A collection of Cell\_Type elements that define the paragraph properties are composed of [Bullet](#Section_d9b4e087744e48109f823cbcfcc8c5e7), [BulletFont](#Section_dbade1efe63c40b1bc56d426897be651), [BulletFontSize](#Section_58c48d8409934755baa0e6c093d93f13), [BulletStr](#Section_a64f1c829a4f45d7914f7bd65d8a0e5c), [Flags](#Section_4013b33847ac4b20a00f822bfa49108c), [HorzAlign](#Section_1c184dde942b45ec93b708e0eeb1e3a7), [IndFirst](#Section_001daa77c1f947f28e25889dce181358), [IndLeft](#Section_9c08d34ba26142b6a5b720d92ec79bbb), [IndRight](#Section_88e9057907e2411db824651009614919), [SpAfter](#Section_0c8c9c828e3c4e528674c626fbe47452), [SpBefore](#Section_1ce20326bba9498a8dfdcac0ea5db746), [SpLine](#Section_64ea293a99ed4411a6bcd15519472839), and [TextPosAfterBullet](#Section_ed5f29afe86840ff80f7e0df8d2e1e3a) Cell\_Type elements.

#### Tabs Properties

The [tp\_Type](#Section_166dcd016b8840448c35e21cb12e2066) element in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) specifies the beginning of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) and the set of tab stops used for the text run. These tab stops are used until the end of the [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836) element, or until another tp\_Type element specifies new tab stops.

The tp\_Type element specifies the index of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is contained in a [Tabs](#Section_1ebf938deeb2454486090feeb086cf2c) [Section\_Type](#Section_735b599d1359476785931c508a885779) element. This Row\_Type element specifies the information about the tab stops using a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. It is either contained under the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for the shape or it is [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

A Row\_Type element in a Tabs Section\_Type element contains a series of [Position](#Section_9bddfa2824e74b6a86d70a44aac68de1) and [Alignment](#Section_af47b660f0d24c458b965764fcc637fe) Cell\_Type element pairs with **N** attributes equal to Position# and Alignment#, where the # represents the tab stop index. A Position and Alignment pair specifies the stop position and alignment for a single tab stop.

#### Text Fields

The [fld\_Type](#Section_fa12e060338c4c998d41571ed75eade8) element in a [shape](#Section_2995871af1b144e69754989fb760ee18) or [master](#Section_04e031963af24a52bd32ef5d79b9efc5) specifies a [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) that is used in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It specifies the index of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is contained in a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) element. This Row\_Type element specifies the information about the field using a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. It is either contained under the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for the shape or it is [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

If the value of the **IX** attribute of a fld\_Type element is equal to the value of the **IX** attribute of a Row\_Type element that is contained in a Field Section\_Type element in the shape or master, the Cell\_Type elements contained under the Row\_Type element specify information about the field of the fld\_Type element.

A collection of Cell\_Type elements that define a text field composed of [Calendar](#Section_e16f56ae177b42c99db8d423fe9add62), [Format](#Section_246c0b5f7ee1437bbc388cd71ba37e81), [ObjectKind](#Section_9620d6dbe0fb4e68b43ca916b3453475), [Type](#Section_6cf3897b0deb4eca92249ca29be35bf4), and [Value](#Section_4919da7a6e944e0b8a77a96f67544087) Cell\_Type elements. The Value Cell\_Type element specifies the value of the field. The Calendar, Format, ObjectKind, and Type Cell\_Type elements specify how the value of the field is displayed in the text run.

#### Text Block

The [**text runs**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) associated with a [shape](#Section_2995871af1b144e69754989fb760ee18) are rendered using a rectangular composition area called a text block. A text block specifies information related to the visual appearance of the text runs as a whole.

A text block uses a collection of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements contained under the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element for a shape to specify position, transform, margin, alignment, direction, and background information for the text runs associated with the shape. A collection of Cell\_Type elements that define how text is arranged in the composition area of a text block that is detailed in the following table.

| Cell\_Type element(s) | Description |
| --- | --- |
| [TxtPinX](#Section_e68ce2456c3f41feac98e9b2ccc8a95f), [TxtPinY](#Section_83141e1c89dd43aab3d4fc92eac297aa), [TxtLocPinX](#Section_aaacf34400a54b5d9bdfa7db33de5f09), and [TxtLocPinY](#Section_b62391062fdd43d68ecee35b4558839f) | Specifies the [text block coordinate system](#Section_3adb1f7a74ff4bbabfdb9e9ce4d79513). |
| [TxtAngle](#Section_d4a66eab6fe444e6bc1eae3f3f547998) | Specifies the angle of counterclockwise rotation of the text block in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape it is associated with. |
| [TxtWidth](#Section_0b339d8533f749d5997d21ad1a29c29a) and [TxtHeight](#Section_e20527a4bac54218af90996224c01761) | Specifies the width and height of the text block. |
| [LeftMargin](#Section_48a87dda9ae3417889182299821722a3), [RightMargin](#Section_3fb8b5cc68344db2a7e296be9e1fff65), [TopMargin](#Section_e73d145f308e4fb8bff7f69806115285), and [BottomMargin](#Section_965b17d216ef4ad4b9ac233d6524091e) | Specifies the positioning of the text runs against the borders of the text block. |
| [TextDirection](#Section_f1ce38e408034b329904f7d478bde71d) | Specifies whether the text runs are rendered in an upright alignment with the top border of the text block or in an upright alignment with the right border of the text block within the text block coordinate system. |
| [VerticalAlign](#Section_732e98b321eb4d1182ef68287a55c1be) | Specifies the vertical alignment of the text runs.  If the value of the TextDirection Cell\_Type element structure is equal to zero, text runs are rendered starting from the top border, middle, or bottom border of the text block within the text block coordinate system. If the value of the TextDirection Cell\_Type element structure is equal to one, text runs are rendered starting from the right border, center, or left border of the text block with the text block coordinate system. |
| [TextBkgnd](#Section_13fac68679a040449b15f70caab0a72b) | Specifies the solid fill color property of the background of the text block. |
| [TextBkgndTrans](#Section_d78ea64335994642aa17cd76300da9c8) | Specifies the transparency level of the [solid fill](#Section_52745b68d28443b9a8f0564732579b99) color property of the background of the text block. |

##### Text Block Coordinate System

A point on a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) is specified by coordinates on a two-dimensional Cartesian plane where the x-coordinate specifies the horizontal position and the y-coordinate specifies the vertical position. Every text block defines a coordinate system.

The [TxtPinX](#Section_e68ce2456c3f41feac98e9b2ccc8a95f) and [TxtPinY](#Section_83141e1c89dd43aab3d4fc92eac297aa) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element of a [shape](#Section_2995871af1b144e69754989fb760ee18) specify the pin of the text block in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. The [TxtLocPinX](#Section_aaacf34400a54b5d9bdfa7db33de5f09) and [TxtLocPinY](#Section_b62391062fdd43d68ecee35b4558839f) Cell\_Type child elements of a ShapeSheet\_Type element of a shape specify the pin of the block in local coordinates.

A point on a text block specified in local coordinates can be converted into its associated shape coordinates by applying transformations in the following order:

1. Subtract the value of the TxtLocPinX Cell\_Type element from the x-coordinate.
2. Subtract the value of the TxtLocPinY Cell\_Type element from the y-coordinate.
3. Mirror the point about the y-axis if the value of the [FlipX](#Section_6279be426dca495b910aa84512fdc2f1) Cell\_Type element is equal to one.
4. Mirror the point about the x-axis if the value of the [FlipY](#Section_2c77fe58deff48e9ad5dd108fb5d769e) Cell\_Type element is equal to one.
5. Rotate the point counterclockwise around the origin by the value of the [TxtAngle](#Section_d4a66eab6fe444e6bc1eae3f3f547998) Cell\_Type element.
6. Add the value of the TxtPinX Cell\_Type element to the x-coordinate.
7. Add the value of the TxtPinY Cell\_Type element to the y-coordinate.

### Comments

Comments are plain text annotations in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). Each comment has an associated author and [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). It can have an associated [shape](#Section_2995871af1b144e69754989fb760ee18) on the drawing page. A collection of comments in a web drawing is specified by a [Comments XML part](#Section_5f293c7f7a834d93a6e6d1c67130533e).

A [Comments\_Type](#Section_e150a15c60c24ef98027a91d702f584a) element in a Comments XML part contains the [AuthorList\_Type](#Section_7f9457fdeb7a4f4e9ecdd82dd5855443) element and the [CommentList\_Type](#Section_02afbbd0887e4d40b9f6b840e827266b) elements, which specifies the comment authors and comments respectively.

Each [AuthorEntry\_Type](#Section_f8b36e3890fa4c45926438a2dc4c8a4a) child of an AuthorList\_Type parent element contains information for a single author. An author can be associated with one or more comments. The author is uniquely identified by the **ID** and **ResolutionID** attributes. Additional author information is provided by the **Name** and **Initials** attributes.

Each [CommentEntry\_Type](#Section_6fac1d129c364e669dc904242178777e) child of a CommentList\_Type parent element represents a single comment. The [**text runs**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) associated with a comment are specified by the contents of a CommentEntry\_Type element. The following attributes specify additional properties of the comment:

* The **AuthorID** attribute specifies the author of a comment. Thisattribute is equal to the **ID** attribute of the AuthorEntry\_Type element that corresponds to the author.
* The **PageID** attribute specifies the page a comment refers to. This attributeis equal to the **ID** attribute of a [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element of the drawing page.
* The **ShapeID** attribute can specify a shape on the drawing page that the comment refers to. When the **ShapeID** attribute exists, it is equal to the **ID** attribute of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element of the shape.

### Data Connectivity and Refresh

This section describes how [**data sources**](#gt_e091613c-6901-4874-b9b2-27273ead1075) can be referenced, queried and connected to from within a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

#### Data Connections

A [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) can be linked to data in databases and other [**data sources**](#gt_e091613c-6901-4874-b9b2-27273ead1075) which can affect various attributes of the web drawing, including its visual appearance. A relationship to such data sources is called a data connection.

A data connection contains properties that specify how the application connects to and queries the data source, including the type of [**data provider**](#gt_33fa4cdc-ae58-4a6c-8111-31377e1d292e) (for example, [**OLE DB**](#gt_333f4fb1-4882-48df-bce6-f9961b408f31) or [**ODBC**](#gt_7883fa02-8dc0-4154-894f-fe3a7bff153e)) required to access a data source, the name of the server on which the data source is hosted, security information to access the data source, and a [**query**](#gt_37fbc661-f744-48fa-9d8e-f34513cab9c2) to execute on the server.

The data connections in a web drawing are specified by the [Connections XML part](#Section_3f772fce51914e5084545086060dfd87). Each data connection is specified by a [DataConnection\_Type](#Section_56d4076aa2af442284bc402932fbe06d) child element of the [DataConnections](#Section_16d2501b923c4b718896aa70f16d71fc) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7).

Data connection information can be specified solely by the DataConnection\_Type element or partially by information in an external file. If the **FileName** attribute of the DataConnection\_Type element is empty, a data connection is solely specified by the DataConnection\_Type element. If the **FileName** attribute is not empty, a data connection is specified by the DataConnection\_Type element and the information contained in the file found at the path described by the value of the **FileName** attribute.

The following elements in parts of a web drawing specify supplementary information about the data connection.

* A [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element in the [Recordsets XML Part](#Section_8efdea2d0ddf4e039750a0e16b99320a) contains a **ConnectionID** attribute that is equal to the **ID** attribute of the DataConnection\_Type element for the data connection and specifies a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) that uses this data connection to connect to and query a data source.

Data connections can be established for the types of data sources listed in the **ConnectionString** attribute of the DataConnection\_Type element.

#### Recordset

A recordset is the data that is returned from a [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075), organized into sets of [**rows**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) and [**fields**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc). The recordset is related to a specific data source using a [data connection](#Section_0c83304b6f034218bfb1a49d51060e9c). The operation of replacing the contents of a recordset with data queried from a data source, using the associated data connection, is called [refreshing](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) the recordset.

The rows of a recordset can be linked to [shapes](#Section_2995871af1b144e69754989fb760ee18) in [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) through [data binding](#Section_9ab2ddda33b5434d9256bd769e300cd1). This allows additional properties of the web drawing to be updated when the recordset is refreshed.

The recordsets in a web drawing are specified by the [Recordsets XML part](#Section_8efdea2d0ddf4e039750a0e16b99320a). Each recordset is specified by a [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) child element of the [DataRecordSets](#Section_33cbaaf28df74081bb5b55af82b063e4) element in a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7). The fields of the recordset are specified by the [DataColumns\_Type](#Section_1fc5f6c5c3d84ef78aa716fb85e69b68) child element of the DataRecordSet\_Type element.

##### Data Binding

Data binding is the association between a [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) and a [shape](#Section_2995871af1b144e69754989fb760ee18) in a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). A row can be bound to zero or more shapes. A shape can have zero or one recordset rows bound to it.

The rows of a recordset that are bound to shapes are specified by the [RowMap\_Type](#Section_ffc00766ecc44e5cb5eeedda9bc0f58e) child elements of the [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element for the recordset. In each RowMap\_Type element, the row is identified by a **RowID** attribute, the shape is identified by a **ShapeID** attribute, and the drawing page containing the shape is identified by a **PageID** attribute.

The [**fields**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) of a recordset are mapped to [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) items in the bound shapes. A field can be mapped to zero or one shape data item in each shape that is bound to a row in the recordset. A shape data item can have zero or one fields bound to it.

The mapping between each field of the recordset and shape data item of the bound shape is specified by the [DataColumn\_Type](#Section_97e06397990447619be3884e39045969) element for the field and a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of the [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) element for the shape. A mapping exists if there is a Row\_Type element with an **N** attribute that is equal to the **Name** attribute of the DataColumn\_Type element.

#### Recordset Refresh

A recordset refresh is the operation of replacing the contents of a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) with data queried from a [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075). Refresh information is specified by the recordset and its associated [data connection](#Section_0c83304b6f034218bfb1a49d51060e9c).

The refresh [**query**](#gt_37fbc661-f744-48fa-9d8e-f34513cab9c2) is specified by the **Command** attribute of the [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element for the recordset. If the **Command** attribute of the DataRecordSet\_Type element is empty, the refresh query is specified by the **Command** attribute of the [DataConnection\_Type](#Section_56d4076aa2af442284bc402932fbe06d) element for the data connection.

Only recordsets that are enabled for data refresh participate in refresh operations. A recordset is enabled for data refresh when both of the following conditions are true:

* A [PublishSettings\_Type](#Section_5351e0e3dbdd45e8a0bacc4c7482ac94) child element of the [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79) element for the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is missing, or the PublishSettings\_Type element contains a [RefreshableData\_Type](#Section_7146b5f9e41248b78db8caa3afb13746) child element with an **ID** attribute equal to the **ID** attribute of the DataRecordSet\_Type element for the recordset.
* The DataRecordSet\_Type element for the recordset contains an **Options** attribute with a value that is not a bitwise OR combination of the value one.

When the data in the [**rows**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of a recordset change, [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) in [shapes](#Section_2995871af1b144e69754989fb760ee18) with [data bindings](#Section_9ab2ddda33b5434d9256bd769e300cd1) to the recordset are also updated. The **RefreshOverwriteAll** attribute of the DataRecordSet\_Type element for the recordset determines which shape data items are updated. Individual shape data items are then updated in the following manner:

* If the [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) associated with the shape data item contains a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) containing a [Guard](#Section_1bc6f67f62b947fda85d8043f5fcb3db) [function token](#Section_71b8cdb618854fa2a75016d6626054f4), the shape data item is not updated.
* If the cell associated with the shape data item contains a formula expression containing a [SetAtRef](#Section_579d4837d5644e2dab2411ff86953557) function token, the value of the cell referenced by the first argument of the function is updated with the value of the recordset for the mapped [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) and row.
* Otherwise, the value of the shape data item is updated with the value of the recordset for the mapped field and row. This could involve a data type conversion from the data type of the field, as specified by the **DataType** attribute of its corresponding [DataColumn\_Type](#Section_97e06397990447619be3884e39045969) element, to the data type of the shape data item.

All [formulas](#Section_3861a838e4334529bb8f2ec92e61da89) in cells that have been updated are recalculated as part of a [diagram update](#Section_3b9d352a42924aa9b5fec66141d0c5e1).

#### Recordset Row Addressing

Specific [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) [**rows**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) are tracked across a [recordset refresh](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) operation using a [**primary key**](#gt_e4d8c530-39c1-4fc6-8ccc-8d51a221158d). A recordset can explicitly specify a primary key, or it can specify that the current ordering of the rows be used as a primary key.

If the **RowOrder** attribute of the [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element for the recordset is zero, the primary key is specified by a collection of [PrimaryKey\_Type](#Section_a503e916c0d240429d30e7dc4d6cfb65) child elements of the DataRecordSet\_Type element. If the **RowOrder** attribute is one, the primary key is specified by the position of each row in the recordset regardless of its contents.

### Diagram Update

This section describes how the properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) are changed from their current state to an updated state by a diagram update operation. A diagram update is initiated following a [recordset refresh](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) or through [update triggers](#Section_6da736d6393340dd86acdbb1220170cd). These actions each specify a set of properties to change.

Additional properties of the web drawing can have [formulas](#Section_3861a838e4334529bb8f2ec92e61da89) that are dependent on the initial set of updated properties. [Expressions](#Section_e715b9f4e36e402bb9625894c4ad7532) in the formulas are [evaluated](#Section_c5bb54635973457ab48163e1e29c5aeb) to calculate new property values.

#### Update Triggers

An update trigger is a structure in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) that signifies a [diagram update](#Section_3b9d352a42924aa9b5fec66141d0c5e1) is needed. The trigger is specified by the presence of a special [function token](#Section_71b8cdb618854fa2a75016d6626054f4) in the [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) of a property of the web drawing.

The [Category](#Section_0ea08f1dc69740d58e2ce69312e26f77), [Creator](#Section_08ece44588164cefa3bf994c88bceca0), [Description](#Section_bc232ee0e33346a68a9abe1b2cedfe76), [Directory](#Section_e53d4962d1074da6bbabd6346b3cd8f1), [DocLastEdit](#Section_504794ac13b347e1b5e0db60997eca53), [DocLastSave](#Section_2c07a217f483446db74e78710a39debe), [Keywords](#Section_3b0df195b5804e9a91a7e1047b72910f), [Now](#Section_0aafebc34b2f4935a0c12c44d9ecbae5), [Subject](#Section_6f5c323509474428ae584ae48c4ba6f9), and [Title](#Section_4ff8fdd26365487bac287126cb630839) function tokens specify update triggers.

The [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element specifies one or more [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b)s that contain a specific update trigger. The **N** attribute of the Trigger\_Type element determines the update trigger and the possible values for the **N** attribute are defined in the [Triggers](#Section_120f9695e3d34c5ebfeedf318590a573) section of this specification.

#### Formulas

The properties that are specified in [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) can have formulas. Formulas specify how the properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) are modified during a [diagram update](#Section_3b9d352a42924aa9b5fec66141d0c5e1) operation.

A formula is specified by the **F** attribute of a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element in a [Section\_Type](#Section_735b599d1359476785931c508a885779), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), or [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) element.

The following sections describe the concepts and elements of a formula.

##### Formula Expression

A formula expression is a sequence of functions, values, and references that make up a [formula](#Section_3861a838e4334529bb8f2ec92e61da89) and that produce a value when [evaluated](#Section_c5bb54635973457ab48163e1e29c5aeb).

A formula expression contains a sequence of [parse tokens](#Section_8c89c22183b145e4970f6488f7ac70e4). The [Formula ABNF and Full Grammar Definition](#Section_e617d7e0b0d94019890ccb4de0e3c6bf) section in this specification defines the valid formula expressions in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

##### Parse Tokens

A parse token is a string of characters that specifies a [**token**](#gt_95f17071-c8f1-403a-8a92-cf87aa7d40f5) in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). A parse token in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) is a [function](#Section_71b8cdb618854fa2a75016d6626054f4), an [operand](#Section_feec456821f8404b8592d9be8f43e99b), or a [reference token](#Section_a5d209e86bf34212acb3509df1b76d7d).

###### Function Tokens

A function token represents a function in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). The [Formula ABNF and Full Grammar Definition](#Section_e617d7e0b0d94019890ccb4de0e3c6bf) section in this specification defines the valid function tokens in a formula expression. The syntax for each function token is described in the [Function Token Definitions](#Section_841b28f1ba4a46fb9034a9d51de6e0f9) section.

A function can specify a set of arguments used in the [evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) of the function token. The arguments of a function are additional [parse tokens](#Section_8c89c22183b145e4970f6488f7ac70e4) in the formula expression. The value returned by an evaluated function is an [operand token](#Section_feec456821f8404b8592d9be8f43e99b).

###### Operand Tokens

An operand token represents a value in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). This token can be either the solitary value in a [formula](#Section_3861a838e4334529bb8f2ec92e61da89), an argument of a function, the [evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) result of a function, or the evaluation result of a [cell reference](#Section_a5d209e86bf34212acb3509df1b76d7d).

The [Formula ABNF and Full Grammar Definition](#Section_e617d7e0b0d94019890ccb4de0e3c6bf) section in this specification defines the valid operand tokens in a formula expression. The syntax for each operand token is described in the [Parse Token Definitions](#Section_003704de9b914a79a32046dac55d7e28) section.

In addition to its use in a formula expression, an operand token also specifies a single value that can be persisted in the file and represents one of the tokens specified in the token group [vAny](#Section_4a97b6616cca49a7911670b57c9379d2).

An operand token can have **Value**, **Unit**, **Dimension**, **Currency**, and **Error State** properties.

The **Value** of an operand token is the value of the structure. When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, the **Value** of an operand token is stored in the **V** attribute with the following exceptions:

* For a [Boolean value](#Section_4954ad8351eb4c0da2a63fe272ccb84d), the **Value** is "FALSE" or "TRUE" but is stored as zero or one, respectively, in the Cell\_Type element **V** attribute.
* For a [currency value](#Section_e401d710f7574a7a87af5275e9e120d5), both the **Value** and **Currency** are stored in the **V** attribute.
* For a [multi-dimensional value](#Section_cda376558fd845d5bb4fcd6578dad285), the **Value**, **Unit**, and **Dimension** are stored in the **V** attribute.
* For a [two-dimensional point](#Section_74bafdc175d543d4b029b547a63c26b8), the **Value** and **Unit** are stored in the **V** attribute.
* For an [error code](#Section_93a276b0294d468587050798f619a88d), the operand token has no **Value**.

The **Unit**, **Dimension**, and **Currency** of an operand token give additional meaning to the token’s **Value**. Not all operand tokens have a **Unit**, **Dimension**,or **Currency**. When stored in a Cell\_Type element, the **Unit** of an operand token is stored in the **U** attribute.

A **Dimension** is not persisted unless the token is a PtgNumMultiDim. For a PtgNumMultiDim, the **Value** and the **Dimension** are stored in the **V** attribute as specified by the PtgNumMultiDim format.

Currency values are the only operand tokens to have a **Currency**. For a currency value, the **Value** is concatenated with the **Currency** and stored in the **V** attribute as specified by the [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token format.

The **Error State** of an operand token represents an error obtained during formula evaluation. Depending on the function, the **Error State** of an operand token can either be used or ignored during formula evaluation. When stored in a Cell\_Type element, the **Error State** of an operand token is stored in the **E** attribute.

An operand token represents, and can be converted into, one of the following types of values.

* A [string value](#Section_fb468210c01949398888a3bf4aa3845d)
* A [numeric value](#Section_b5ad1198be394ba1beb36096450475a0)
* A Boolean value
* A currency value
* A [color value](#Section_4176b6fadd7e48e383a46a1ae9eac6c1)
* A [date value](#Section_56868d1afe1346799f514beab5adbab3)
* A [geometry function value](#Section_7f0794087d3c4688a2de3f230bb456dc)
* An [error value](#Section_ef7736101a5d4e8cb030c33fcff78419)

These conversions translate many different source operand tokens into tokens representing different classes of inputs that are required by functions. Functions can operate on the converted tokens but can also refer to elements of the source token. See the [Custom Input Types](#Section_82b18e3246c3426ebe8160954c5fd74e) section for details on common token conversions used by functions.

String Values

A string value represents textual information and is specified as a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token. For a string operand token, the **Value** property is the string and the **Unit** property is equal to "STR". The token does not have a **Dimension** or **Currency** property.

Other tokens can specify a string value according to the conversion specified in the [vString](#Section_706c71a7cb044b7e97b6f136c13acd60) custom input type.

Numeric Values

A numeric value represents a number with or without units. [Boolean values](#Section_4954ad8351eb4c0da2a63fe272ccb84d), [currency values](#Section_e401d710f7574a7a87af5275e9e120d5), [color values](#Section_4176b6fadd7e48e383a46a1ae9eac6c1), and [date values](#Section_56868d1afe1346799f514beab5adbab3) are classified separately.

A numeric value is specified as one of the tokens in the custom token group [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed) (except [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)). Other token types can also represent numeric values as specified in the [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc), [vFloat](#Section_91b47f1c6d1441fca31a1019497abaa7), [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81), [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44), [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249), and [vUnsignedLong](#Section_7f9751418d77469298d44234d34095eb) custom input types.

Numeric values that represent length, angle, duration, and typographic units, as well as higher dimensional forms of these units, are described in the [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) section. These numeric values have the special property so that their **Value** property is specified as a [Custom Internal Unit Type](#Section_ea6328b8644b4f05bc9b03b6415eb764). When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), the **Value** is converted to the **Unit** and **Dimension** properties of the operand token; this is called the display value. During [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb), the operand token **Value** (not the display value) from the formula expression is used.

A numeric value that represents a percentage value is specified as a [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) parse token. The **Value** is a number as a fraction of 100, the **Unit** is equal to "PER", and the **Dimension** is zero.

If the numeric value has no units, it represents a number and is persisted in the file as a [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) parse token or equivalent member of the [vScalar](#Section_53aa08d870b047449a94608d01487e40) custom token group. The **Value** is equal to the numeric value, and the **Dimension** is zero. It does not have a **Unit**.

Boolean Values

A value that represents a Boolean value is specified as a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token. The **Value** property is either "FALSE" or "TRUE", the **Unit** is equal to "BOOL" or does not exist, and the **Dimension** property is zero. It does not have a **Currency** property.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, the **Value** of an operand token is converted to zero or one, where zero represents "FALSE" and one represents "TRUE", and is stored in the **V** attribute.

Other tokens can also represent a Boolean value according to the conversion specified in the [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548) custom input type.

Currency Values

A value that represents a currency is specified as a [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. No other token type can represent a currency value. The only custom input type that preserves both a currency value and its associated currency is [vDoubleEx](#Section_311bb3d6a0404a929b29e51641563a9c).

The **Value** is the numeric value of the currency, the **Currency** is the associated currency string as specified in [vCurrency](#Section_afa85c0df5d947488108d3e5ac691720) custom structure, the **Unit** is equal to "CY" and the **Dimension** is zero.

Color Values

A value that represents a [**red-green-blue (RGB)**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color value is specified as a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token. The **Value** represents the hexadecimal value of the color or the index in the [color table](#Section_1fac45bfef104b29ada14acf47fed340), the **Unit** property is equal to "COLOR" or does not exist, and the **Dimension** property is zero. It does not have a **Currency** property.

Other tokens can also represent a color value according to the conversion specified in the [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type.

Date Values

A value that represents a date is specified as a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. The **Value** property is a date and time of day, the **Unit** property is equal to "DATE", and the **Dimension** property is one. It does not have a **Currency** property.

Other token types can represent a date according to the conversion specified in the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function.

Geometry Function Values

A geometry function value represents [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) data that is specified by a [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8), [PtgNURBS](#Section_28741816c5ba4ee6a73801938ff478c4), or [PtgPolyline](#Section_ca51a3f3efbc40ff844b7c54730e31c9) parse token. The **Value** property is a set of numeric values that specify individual properties of the geometry path. These numeric values are arranged in a syntax that matches the [Pnt](#Section_e634f457cf514dafaa225387dabaa9dc), [NURBS](#Section_eecdfe10f361434ca5a827668bad6404), and [Polyline](#Section_b81ec59d54424f1d93b5931a65729ad4) function token definitions.

The **Unit** property of the token is equal to "PNT" for a PtgPnt or "POLYLINE" for a PtgPolyline; the PtgNURBS does not have a **Unit**. The **Dimension** property is zero, and it does not have a **Currency** property. No other token types can represent a geometry function value.

Error Values

An error code that is returned as a result of a [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) is specified as a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token. When a function encounters a PtgErr as one of its arguments, it returns the same error value. The exceptions are the functions [IsErr](#Section_3adc56e837f64fbcb5f51aa5cdfd602c), [IsErrNA](#Section_be28b7b9cc854b11a4d841c24b637a2b), [IsError](#Section_eaa5fccc91eb40dfb1ec249236426760), and [IsErrValue](#Section_14f8f99fb80046be928c6876ada43aba), which are specifically designed to detect specific error values.

###### Reference Tokens

A reference token represents a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a), other than the cell containing the [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), whose value is used in the [evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) of a formula expression. A reference token allows a formula expression to depend on the values of other properties in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The [Formula ABNF and Full Grammar Definition](#Section_e617d7e0b0d94019890ccb4de0e3c6bf) section defines the valid reference tokens in a formula expression. The syntax for each reference token is described in the [Reference Token Definitions](#Section_070e1ba51db0433a8a1b08fdac8f6a26) section.

The result of a reference token that is evaluated is an [operand token](#Section_feec456821f8404b8592d9be8f43e99b).

##### Formula Evaluation

Formula evaluation is the process of taking a complex [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) and computing a single resulting [parse token](#Section_8c89c22183b145e4970f6488f7ac70e4).

The parse tokens that make up the formula expression are evaluated in sequence as specified by the [Order of Operations](#Section_54a9f769fa46425e9d788801551a0804). Each [function token](#Section_71b8cdb618854fa2a75016d6626054f4) and [reference token](#Section_a5d209e86bf34212acb3509df1b76d7d) in the formula expression is evaluated to produce an [operand token](#Section_feec456821f8404b8592d9be8f43e99b).

The logic for evaluating a particular function token is specified by the [Function Token Definitions](#Section_841b28f1ba4a46fb9034a9d51de6e0f9). A reference token is evaluated by returning the value of the [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) specified by the reference token. Functions and references are evaluated within a [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4), which is the specification of the [sheet](#Section_fd48786aaeee44ce84b100884dc31200) containing the properties to be used in the evaluation.

When the formula expression of a cell is evaluated, the formula expressions of other cells that contain reference tokens that reference the cell are also evaluated.

##### Reference Context

A reference context is the [sheet](#Section_fd48786aaeee44ce84b100884dc31200) containing the properties to be used in the [evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) of a [function token](#Section_71b8cdb618854fa2a75016d6626054f4) or [reference token](#Section_a5d209e86bf34212acb3509df1b76d7d).

The reference context can vary for each function token or reference token in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). The current reference context is the context used for the current token being evaluated.

The [CrossPageRef](#Section_47586acdcb584444a4b7f813f7fedaca), [DocSheetRef](#Section_e6619635198a4486b718c5273ed1e2c6), [MasterSheetRef](#Section_435b2f8945b145ceb36b1b89c7862cd8), [PageSheetRef](#Section_5837d1f1d2f346f283d778f8d8bb725c), [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470), and [StyleSheetRef](#Section_500ba523e86b4d2e853771726409e2ba) reference tokens specify the reference context of the function token or reference token that immediately follows them in the formula expression. If one of these reference tokens does not precede the token to be evaluated, the default reference context is the sheet containing the formula expression that contains the function token or reference token.

#### Unit Number

A unit number is a numeric value with a unit of measure. Unit numbers represent length, angle, duration and typographic units, higher dimensional forms of these units, and dates.

All unit numbers have a **Dimension** property. [One-dimensional unit numbers](#Section_8f714eb8bc33464d8e5427ce8eaa5365) are used to represent length, angle, duration, and typographic measurements. Two-dimensional units are used to represent area measurements, and three-dimensional units are used to represent volume measurements. A numeric value that has a **Dimension** greater than one is called a [multidimensional unit number](#Section_c93d01a168e1466f8d10edb7ba0f24a3).

The **Value** property of a one-dimensional unit number is specified as a [Custom Internal Unit Type](#Section_ea6328b8644b4f05bc9b03b6415eb764) or a date and time as specified by a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. The **Value** of a multidimensional unit number is specified as a Custom Internal Unit Type for the [PtgAcre](#Section_4ed092ea74dc47fd8782a72b8af9b84f) and [PtgHectare](#Section_6e8458cd0701450986110a116d14cfa9) operand tokens or as a value as specified by the [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) parse token.

For numeric values where the **Value** is expressed as a Custom Internal Unit Types, the **Unit** property determines how the numeric value is formatted and displayed in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), or the user interface. When found in a formula expression or the user interface, the **Value** is converted to the **Unit** and **Dimension** of the operand token; this is called the display value. During [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb), the operand token **Value**, not the display value from the formula expression, is used.

##### One-dimensional Unit Number

If the numeric value represents a length or distance measurement, the **Value** property is expressed as a [lengthInternalUnitNumber](#Section_516ff6cd424241d09233b76aefc64430) custom internal unit type. The operand tokens that represent length or distance measurements are [PtgNumCM](#Section_329125cb42144abe925c46f77abb9b93), [PtgNumDft](#Section_c1c1c5f00830454fbb52f3169c43b3ca), [PtgNumF](#Section_4099d68402ca4cf9865d18a93ff5e701), [PtgNumFI](#Section_9ed637b4cfc141ffbbb5e04b5d9cebb4), [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822), [PtgNumKM](#Section_a0b32592ed6b4b4c8729d2a94ce45397), [PtgNumM](#Section_b0afad8bab4543a7975e371aecf81773), [PtgNumMI](#Section_dc6dab5c773c48798bb6ab47950d3906), [PtgNumMM](#Section_0ec7d8b3108c4eb0b1abff361b35f046), [PtgNumNM](#Section_7dd9e771a61f4f47bc5074c0473e39da), and [PtgNumYards](#Section_0541f25e2b9544e782cdd9d5263dff38).

If the numeric value represents an angle measurement, the **Value** is expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e) custom internal unit type. The operand tokens that represent angles are specified in the [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping.

If the numeric value represents a duration measurement, the **Value** is expressed as a [durationInternalUnitNumber](#Section_f533f47261a840e0890ae39725d41eee) custom internal unit type. The operand tokens that represent durations are [PtgEDay](#Section_9411fd36e6e64f2d8022bfb30daefdc6), [PtgEHour](#Section_339a94e35a804f36a56ffc3520ab9dbf), [PtgEMin](#Section_0bde3065fff94775b972fb4580aae9c7), [PtgESec](#Section_81e009e4b1e74007afe74d6c05843476), [PtgEWeek](#Section_d6b91ccf04bf458dbe274a44eb2a7ec1), and [PtgTDurDft](#Section_88d43cf9dc69435f84e56fb7df3d786b).

If the numeric value represents a length measurement used in typography, the **Value** is expressed as a [typographicInternalUnitNumber](#Section_60ace6256a86466cbdd1011164b51cce) custom internal unit type. The operand tokens that represent typographic measurements are [PtgTypCD](#Section_a4caa003fcf04e468b95d146a708f2e7), [PtgTypCi](#Section_312a4de63b514f84837766c28a767143), [PtgTypDft](#Section_3c1afeb46a104059866977b105fcc380), [PtgTypDi](#Section_b9a9ab05727348d586c920a1807b7ef6), [PtgTypPi](#Section_4bb1f53c92974bdfacc0806610d50e25), [PtgTypPP](#Section_2e9fc0fa541c4cf9a4df431e3b94925d), and [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5).

A numeric value with units specified as a [PtgPageDft](#Section_b444caac3e8b41bfaa556fd84dec0faf) parse token indicates that the internal units are determined by the default values of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), as specified by PtgPageDft. The **Value** is a number expressed as a [Custom Internal Unit Types](#Section_ea6328b8644b4f05bc9b03b6415eb764). For this operand token, the **Unit** of the numeric value is not specified in the PtgPageDft token itself. It is computed as specified by PtgPageDft, and is determined by the default values of the drawing page.

If a numeric value represents a [date value](#Section_56868d1afe1346799f514beab5adbab3), the **Value** is expressed as a date and time of day, in complete extended format, as specified in [[ISO-8601]](https://go.microsoft.com/fwlink/?LinkId=89920) section 4.3.2. The operand token that represents dates is a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token.

The **Value** and **Unit** properties for each unit number are described in the [Parse Token Definitions](#Section_003704de9b914a79a32046dac55d7e28) section. The **Dimension** property of one-dimensional unit numbers is equal to one. They do not have a **Currency** property.

##### Multidimensional Unit Number

If the numeric value represents an acre or hectare, the **Value** property is expressed as the square of a [lengthInternalUnitNumber](#Section_516ff6cd424241d09233b76aefc64430) custom internal unit type. The operand tokens that represent these measurements are [PtgAcre](#Section_4ed092ea74dc47fd8782a72b8af9b84f) and [PtgHectare](#Section_6e8458cd0701450986110a116d14cfa9), respectively.

Higher dimensional forms of other [unit numbers](#Section_da66f46e884147ada137cf49e71157a7) are specified as a [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) operand token. The **Value**, **Unit**, and **Dimension** properties of the unit number are stored in the **V** attribute of the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element containing the token as specified by the PtgNumMultiDim format.

Multidimensional unit numbers do not have a **Currency** property.

## Parts

The Parts sections that follow specify the structure of the [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that are in the ZIP archive of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

### Part Enumeration

The [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) contains the following ZIP [package](#Section_ff1e06b02ee244c8b28670c07383662a) [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) and [relationships](#Section_df1591d7f2814f2da496f29f14f4c0e4).

| Part Name | Relationship between Source and Target Resource | Root Element |
| --- | --- | --- |
| [App](#Section_85e85f4058134276aed798b4d83506d0) | package | Specified outside this document |
| [Comments](#Section_5f293c7f7a834d93a6e6d1c67130533e) | [Document](#Section_7ec3d7b00de24711a7b692daa2020d71) | [Comments](#Section_d9969bb54a2b4d68a4b720f6ef8c2ae3) |
| [Connections](#Section_3f772fce51914e5084545086060dfd87) | Document | [DataConnections](#Section_16d2501b923c4b718896aa70f16d71fc) |
| [Content Type](#Section_15a5e9d316534a27b326ef57c87010c9) | package | Specified outside this document |
| [Core](#Section_f7c9761b3ff14dd59319ebd0af457c99) | package | Specified outside this document |
| [Custom](#Section_c75d20e9d458436bbb4c97c3202c2966) | package | Specified outside this document |
| Document | package | [VisioDocument](#Section_99b55522415b402aaec875b956562728) |
| [Extensions](#Section_3e96bff898904591b5779670479e8cc0) | Document | [Extensions](#Section_741970fc73db4ab298d82d30e31d5357) |
| [Image](#Section_949e69ecfcd64ca0be82c30421c1f9a0) | Image or [Page](#Section_1f15c8f06565465caefd2be6af545e8a) | Specified outside this document |
| [Master](#Section_10b28d2fd32d4b8c96f5dad13d32dd11) | [Masters](#Section_ac2cee21ca0e459b85e335908a476f70) | [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) |
| Masters | Document | [Masters](#Section_7e9c19c3d88148288a472036ee94f378) |
| Page | [Pages](#Section_947b485d676a480b96e6c0e4d1bf58f3) | [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) |
| Pages | Document | [Pages](#Section_2a7bb354101c40a49b7ba596af34e43c) |
| [Recordsets](#Section_8efdea2d0ddf4e039750a0e16b99320a) | Document | [DataRecordSets](#Section_33cbaaf28df74081bb5b55af82b063e4) |
| [Rels](#Section_d80431dd8a6a45f7b74cf7599069edbe) | package | Specified outside this document |
| [Theme](#Section_24711011cb574f6d8de85b95ac64f40a) | Document | [Theme](#Section_6423f604179540c59b1926c5670263c0) |

All other parts are unused and MUST be ignored.

### Shared XML Parts and Schema

The Shared XML Parts and Schema sections that follow list the [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) that are specified outside this document in their entirety.

#### App XML Part

The App XML part is specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 15.2.12.3.

This is an optional [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that specifies the **Extended Properties** of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), as specified by [ISO/IEC29500-1:2016] section 22.2.

The following properties in the App XML part are defined in a web drawing.

| Property Name | Specified in |
| --- | --- |
| Application | [ISO/IEC29500-1:2016] section 22.2.2.1 |
| AppVersion | [ISO/IEC29500-1:2016] section 22.2.2.2 |
| Company | [ISO/IEC29500-1:2016] section 22.2.2.5 |
| HeadingPairs | [ISO/IEC29500-1:2016] section 22.2.2.8 |
| HyperlinkBase | [ISO/IEC29500-1:2016] section 22.2.2.11 |
| HyperlinksChanged | [ISO/IEC29500-1:2016] section 22.2.2.12 |
| LinksUpToDate | [ISO/IEC29500-1:2016] section 22.2.2.14 |
| Manager | [ISO/IEC29500-1:2016] section 22.2.2.15 |
| ScaleCrop | [ISO/IEC29500-1:2016] section 22.2.2.22 |
| SharedDoc | [ISO/IEC29500-1:2016] section 22.2.2.23 |
| Template | [ISO/IEC29500-1:2016] section 22.2.2.25 |
| TitlesOfParts | [ISO/IEC29500-1:2016] section 22.2.2.26 |

#### ContentType XML Part

The ContentType XML part and its syntax are specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 10.1.2.

This [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) identifies the type of content for each [package](#Section_ff1e06b02ee244c8b28670c07383662a) part.

#### Core XML Part

The Core XML part is specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 15.2.12.1.

This is an optional [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that specifies the Core Properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), specified by [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11.

The following properties in the Core XML part are defined in a web drawing, specified by [ISO/IEC29500-2:2012] Table 11-1.

| Property Name |
| --- |
| category |
| created |
| creator |
| description |
| keywords |
| language |
| lastModifiedBy |
| lastPrinted |
| modified |
| subject |
| title |

#### Custom XML Part

The Custom XML part is specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 15.2.12.2.

This is an optional [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that specifies the Custom Properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), as specified by [ISO/IEC29500-1:2016] section 22.3. The syntax of the Custom Properties is specified by [ISO/IEC29500-1:2016] section 22.3.2.2.

The following properties in the Custom XML Part are defined in a web drawing.

| Property Name | Data Type | Data Type Specified in |
| --- | --- | --- |
| BuildNumberEdited | i4 | [ISO/IEC29500-1:2016] section 22.4.2.14 |
| IsMetric | bool | [ISO/IEC29500-1:2016] section 22.4.2.3 |

The lower 16 bits of the **BuildNumberEdited** property MUST be greater than 2714.

#### Rels XML Part

The Rels XMP part and its syntax are specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 9.3.

Each set of [relationships](#Section_df1591d7f2814f2da496f29f14f4c0e4) sharing a common source is represented by XML stored in a Rels XML part.

### Visio Parts

The following sections specify the Visio [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) that are unique to [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9)s and specified in this document.

#### Comments XML Part

An instance of a Comments XML part type that specifies [comments](#Section_60086b03a61f4e25ac5b943c02a66d8e) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.comments+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.openxmlformats.org/officeDocument/2006/relationships |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/comments |

The Comments XML part MUST be a target of an explicit relationship from a [Document XML part](#Section_7ec3d7b00de24711a7b692daa2020d71). Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [Comments](#Section_d9969bb54a2b4d68a4b720f6ef8c2ae3) element.

#### Connections XML Part

An instance of a Connections XML part type that specifies the [data connection](#Section_0c83304b6f034218bfb1a49d51060e9c) information needed to query [**data sources**](#gt_e091613c-6901-4874-b9b2-27273ead1075) and refresh the [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) referenced by a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.connections+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/connections |

The Connections XML part MUST be a target of an explicit relationship from a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [DataConnections](#Section_16d2501b923c4b718896aa70f16d71fc) element.

#### Document XML Part

An instance of a Document XML part type that contains properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). There MUST be exactly one Document XML part in the [package](#Section_ff1e06b02ee244c8b28670c07383662a). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Types: | application/vnd.ms-visio.drawing.main+xml  application/vnd.ms-visio.drawing.macroEnabled.main+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/document |

The Document XML part MUST be a target of an explicit relationship in the package-relationship item.

The Document XML part is permitted to have explicit relationships to the following parts:

* [Connections XML Part](#Section_3f772fce51914e5084545086060dfd87)
* [Masters XML Part](#Section_ac2cee21ca0e459b85e335908a476f70)
* [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3)
* [Recordsets XML Part](#Section_8efdea2d0ddf4e039750a0e16b99320a)
* [Theme XML Part](#Section_24711011cb574f6d8de85b95ac64f40a)
* [Comments XML Part](#Section_5f293c7f7a834d93a6e6d1c67130533e)
* [Extensions XML Part](#Section_3e96bff898904591b5779670479e8cc0)

Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [VisioDocument](#Section_99b55522415b402aaec875b956562728) element.

#### Extensions XML Part

An instance of an Extensions XML part type that specifies [extensibility](#Section_c443f7e03a254e5c9c627f92864d4890) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.extensions+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/extensions |

The Extensions XML part MUST be a target of an explicit relationship from a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be an [Extensions](#Section_741970fc73db4ab298d82d30e31d5357) element.

#### Image Part

An instance of an Image part type that specifies an [image](#Section_c7915a6e1cd84633ad57261c2da081ae) resource used in rendering a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | image/bmp  image/x-emf  image/gif  image/jpeg  image/png  image/tiff |
| --- | --- |
| **Source Relationship:** | http://schemas.openxmlformats.org/officeDocument/2006/relationships/image |

Each part of this type is an image file that conforms to one of the following formats:

* The [**bitmap (BMP)**](#gt_15997d30-1146-484b-bedb-1453466718de) format specified in [[MSDN-BMPST]](https://go.microsoft.com/fwlink/?LinkId=222603).
* The enhanced metafile format (EMF) format specified in [[MS-EMF]](%5bMS-EMF%5d.pdf#Section_91c257d7c39d4a369b1f63e3f73d30ca).
* The Graphics Interchange Format (GIF) format specified in [[GIF89a]](https://go.microsoft.com/fwlink/?LinkId=120784).
* The [**Joint Photographic Experts Group (JPEG)**](#gt_5eda1f18-8071-4b27-ab0f-07f1fb79199d) format specified in [[JFIF]](https://go.microsoft.com/fwlink/?LinkId=89925).
* The [**Portable Network Graphics (PNG)**](#gt_212c87ce-40ba-4311-be2a-494f1a116604) format specified in [[RFC2083]](https://go.microsoft.com/fwlink/?LinkId=90313).
* The [**TIFF**](#gt_eddadea9-c278-4d16-9279-f222df2cb735) format specified in [[RFC3302]](https://go.microsoft.com/fwlink/?LinkId=90416).

An Image part MUST be a target of an explicit [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) from a [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a) except in the case of a [fallback image](#Section_df1d23b86a304991bfeb062f265ab5a1). An Images part MUST NOT have implicit or explicit relationships to any other part specified in this specification.

#### Master XML Part

An instance of a Master XML part type that specifies contents of a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.master+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/master |

The Master XML part MUST be a target of an explicit relationship from a [Masters](#Section_ac2cee21ca0e459b85e335908a476f70) part. The Master XML part is permitted to have explicit relationships to the following parts:

* [Image](#Section_949e69ecfcd64ca0be82c30421c1f9a0) Part

Implicit or explicit relationships to any other parts are unused and MUST be ignored except in the case of [fallback images](#Section_df1d23b86a304991bfeb062f265ab5a1).

The root element for this part MUST be a [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2) element.

#### Masters XML Part

An instance of a Masters XML part type that specifies a collection of masters in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.masters+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/masters |

The Masters part MUST be a target of an explicit relationship from a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). The Masters part is permitted to have explicit relationships to the following parts:

* [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11)

Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [Masters](#Section_7e9c19c3d88148288a472036ee94f378) element.

#### Page XML Part

An instance of a Page XML part type specifies the contents of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.page+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/page |

The Page XML part MUST be a target of an explicit relationship from a [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3). The Page XML part is permitted to have explicit relationships to the following parts:

* [Image](#Section_949e69ecfcd64ca0be82c30421c1f9a0) Part

Implicit or explicit relationships to any other parts are unused and MUST be ignored except in the case of [fallback images](#Section_df1d23b86a304991bfeb062f265ab5a1).

The root element for this part MUST be a [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) element (section 2.3.4.3.5).

#### Pages XML Part

An instance of a Pages XML part type that specifies a collection of [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.pages+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/pages |

There MUST be at most one Pages XML part in the [package](#Section_ff1e06b02ee244c8b28670c07383662a).

The Pages XML part MUST be a target of an explicit relationship from a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). The Pages XML part is permitted to have explicit relationships to the following parts:

* [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a)

Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [Pages](#Section_2a7bb354101c40a49b7ba596af34e43c) element.

#### Recordsets XML Part

An instance of a Recordsets XML part type specifies the [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) and [data bindings](#Section_9ab2ddda33b5434d9256bd769e300cd1) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.ms-visio.recordsets+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.microsoft.com/office/visio/2011/1/core |
| **Source Relationship:** | http://schemas.microsoft.com/visio/2010/relationships/recordsets |

The Recordsets XML part MUST be a target of an explicit relationship from a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [DataRecordSets](#Section_33cbaaf28df74081bb5b55af82b063e4) element.

#### Theme XML Part

An instance of a Theme XML part type specifies a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). The following properties identify this [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7):

| Content Type: | application/vnd.openxmlformats-officedocument.theme+xml |
| --- | --- |
| **Root Namespace:** | http://schemas.openxmlformats.org/drawingml/2006/main |
| **Source Relationship:** | http://schemas.openxmlformats.org/officeDocument/2006/relationships/theme |

The Theme XML part MUST be a target of an explicit relationship from a [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71). Implicit or explicit relationships to any other parts are unused and MUST be ignored.

The root element for this part MUST be a [Theme](#Section_6423f604179540c59b1926c5670263c0) element.

### Visio XML Schema

The Visio XML Schema sections that follow specifies the XML simple types, complex types, elements and attributes contained in the [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

#### Simple Types

This specification does not define any simple types.

#### Complex Types

The following Complex Type sections specify the XML complex types contained in the [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

##### AttachedToolbars\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="AttachedToolbars\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:base64Binary"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### AuthorEntry\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [AuthorList\_Type](#Section_7f9457fdeb7a4f4e9ecdd82dd5855443)

A complex type that specifies properties used to identify an author in a [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Attributes:*

**Name:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the name of the author.

**Initials:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the initials of the author.

**ResolutionID:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**ID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that identifies the author within the Web drawing. It MUST be equal to or greater than one. It MUST be unique amongst all the **ID** attributes of the AuthorEntry\_Type child elements of the containing AuthorList\_Type element.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="AuthorEntry\_Type">
2. <xsd:attribute name="Name" type="xsd:string"/>
3. <xsd:attribute name="Initials" type="xsd:string"/>
4. <xsd:attribute name="ResolutionID" type="xsd:string"/>
5. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
6. </xsd:complexType>

##### AuthorList\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Comments\_Type](#Section_e150a15c60c24ef98027a91d702f584a)

A complex type that specifies the authors in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**AuthorEntry:** An [AuthorEntry\_Type](#Section_f8b36e3890fa4c45926438a2dc4c8a4a) element that specifies properties used to identify an author in a web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="AuthorList\_Type">
2. <xsd:sequence>
3. <xsd:element name="AuthorEntry" type="AuthorEntry\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### AutoLinkComparison\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea)

A complex type that is unused and MUST be ignored.

*Attributes:*

**ColumnName:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that is unused and MUST be ignored.

**ContextType:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**ContextTypeLabel:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="AutoLinkComparison\_Type">
2. <xsd:attribute name="ColumnName" type="xsd:string" use="required"/>
3. <xsd:attribute name="ContextType" type="xsd:unsignedInt" use="required"/>
4. <xsd:attribute name="ContextTypeLabel" type="xsd:string"/>
5. </xsd:complexType>

##### Cell\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), [Section\_Type](#Section_735b599d1359476785931c508a885779), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), [Sheet\_Type](#Section_8187d7a229874248810eb304b36a9669), [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that specifies a single property, which can also be used to represent an [operand token](#Section_feec456821f8404b8592d9be8f43e99b).

*Child Elements:*

**RefBy:** A complex type that is unused and MUST be ignored.

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of the property. It MUST be unique amongst all of the Cell\_Type elements of the containing Row\_Type element, and MUST be equal to a value specified in the Cells (section [2.4.4](#Section_c31ebb48e79243088bc0ebcba281ce20)) section of this specification.

**U:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies how this property is formatted and displayed in a user interface, and how it is used in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). If present, it MUST be equal to a value from the following table.

| Value | Meaning |
| --- | --- |
| AC | Acres |
| DEG | Degrees |
| DA | Radians |
| AD | Degrees-minutes-seconds |
| RAD | Radians |
| BOOL | Boolean |
| COLOR | [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color value |
| CY | Currency |
| DATE | Days |
| ED | Days |
| EH | Hours |
| EM | Minutes |
| ES | Seconds |
| EW | Weeks |
| HA | Hectare |
| CM | Centimeters |
| DL | Inches |
| FT | Feet |
| F\_I | Feet and inches |
| IN | Inches |
| IN\_F | Inches |
| KM | Kilometers |
| M | Meters |
| MI | Miles |
| MI\_F | Miles |
| MM | Millimeters |
| NM | Nautical miles |
| PER | Percentage |
| YD | Yards |
| DP | Inches |
| PNT | Coordinates of a two-dimensional point |
| STR | String |
| DE | Days |
| C\_D | Ciceros and didots |
| C | Ciceros |
| D | Didots |
| DT | Points |
| P | Picas |
| P\_PT | Picas and points |
| PT | Points |

**E:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the error state of the property, obtained during a [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb). If present, it MUST be equal to a value from the following table.

| Value | Meaning |
| --- | --- |
| #DIM! | An [error value](#Section_ef7736101a5d4e8cb030c33fcff78419) that specifies that a dimensional value exceeds the dimension range. |
| #DIV/0! | An error value that specifies division by zero. |
| #VALUE! | An error value that specifies that an operand token is of the wrong type. |
| #REF! | An error value that specifies that a reference to a cell does not exist. |
| #NUM! | An error value that specifies an invalid number. |
| #N/A | An error value that specifies that a value is not available. |

**F:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the formula expression of the property. It MUST be either a formula expression that satisfies the [Formula ABNF and Full Grammar Definition](#Section_e617d7e0b0d94019890ccb4de0e3c6bf) in this specification or equal to a value in the following table.

| Value | Meaning |
| --- | --- |
| No Formula | Specifies that no formula exists. |
| Inh | Specifies a formula that is [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). |

**V:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the value of the property. It MUST be equal to "1.#INF" if it specifies a [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) that is larger than 1.7976e308. If the value of the **V** attribute is equal to "themed", the value of the property is specified by [theme inheritance](#Section_9c650d6d38064e3db76ead30b20f237a).

When the **F** attribute is present, the value of the **V** attribute MUST be used until a formula evaluation is triggered on the **F** attribute that does not result in an error value. After formula evaluation is triggered on the **F** attribute, the value of the property is specified by the most recent result of the formula evaluation that does not produce an error value.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Cell\_Type" mixed="true">
2. <xsd:sequence>
3. <xsd:element name="RefBy" type="RefBy\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="N" type="xsd:string" use="required"/>
6. <xsd:attribute name="U" type="xsd:string"/>
7. <xsd:attribute name="E" type="xsd:string"/>
8. <xsd:attribute name="F" type="xsd:string"/>
9. <xsd:attribute name="V" type="xsd:string"/>
10. </xsd:complexType>

##### CellDef\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Extensions\_Type](#Section_37185c5e64bd40b68679ed9a691a0486), [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348), [RowDef\_Type](#Section_0faaad04825a462da95588741883745c)

A complex type that specifies the definition of a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) that is not specified in this specification.

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the name of the cell. It MUST be unique amongst all the [FunctionDef\_Type](#Section_a535a1b0612d43afb5c76aaa0d00d794), CellDef\_Type, and SectionDef\_Type elements in the [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST NOT be equal to the name of a [function token](#Section_71b8cdb618854fa2a75016d6626054f4) listed in the [Function Token Definitions](#Section_841b28f1ba4a46fb9034a9d51de6e0f9) section of this specification. It MUST NOT be equal to the name of a [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b) listed in the [Sections](#Section_ae0d39d7aa9a4a5d9c51ea0feb34e00f) section of this specification. It MUST NOT be equal to the name of a cell listed in the [Cells](#Section_c31ebb48e79243088bc0ebcba281ce20) section of this specification.

**T:** An xsd:token ([XMLSCHEMA2] section 3.3.2) attribute that specifies the [operand token](#Section_feec456821f8404b8592d9be8f43e99b) used to specify the **Value** of the cell. It MUST be equal to a value from the following table.

| Value | Operand Token |
| --- | --- |
| BYTE | [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) |
| BOOL | [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) |
| WORD | [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62) |
| SHORT | [PtgShort](#Section_f7b9155c4ceb4742bdf4db90e2d5220c) |
| LONG | [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) |
| DOUBLE | [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) |
| PERCENT | PtgNum |
| MULTIDIM | [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) |
| CAL | [vCalendar](#Section_5d9ab6aa8a0646468771d3ff0e02ce96) |

**F:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the default [[formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532)](#Section_c5bb54635973457ab48163e1e29c5aeb) of the cell.

**IX:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that specifies the zero-based identifier of a collection of cells. It MUST be unique amongst all of the CellDef\_Type elements of the containing RowDef\_Type element. It MUST be greater than the **IX** attribute of any preceding CellDef\_Type element of the containing Extensions\_Type, SectionDef\_Type or RowDef\_Type element. If the containing element is a RowDef\_Type element and if the RowDef\_Type element’s containing element is a SectionDef\_Type element with **T** attribute equal to "Indexed" or **N** attribute equal to "Character", "Field", "FillGradient", "Geometry", "Layer", "LineGradient", "Paragraph", "Reviewer", "Scratch", or "Tabs", **IX** MUST exist.

**S:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CellDef\_Type">
2. <xsd:attribute name="N" type="xsd:string" use="required"/>
3. <xsd:attribute name="T" type="xsd:token" use="required"/>
4. <xsd:attribute name="F" type="xsd:string"/>
5. <xsd:attribute name="IX" type="xsd:unsignedByte"/>
6. <xsd:attribute name="S" type="xsd:unsignedByte"/>
7. </xsd:complexType>

##### ColorEntry\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Colors\_Type](#Section_235d2b6231ad4aa99a2e9789a6a6de30)

A complex type that specifies a color available in a [color table](#Section_1fac45bfef104b29ada14acf47fed340).

*Attributes:*

**IX:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the [**zero-based index**](#gt_bc60c405-d92b-4a8c-b63b-e404b1cc4dc4) of the element. It MUST be less than or equal to 253. It MUST be unique amongst all of the ColorEntry\_Type elements of the containing Colors\_Type.

**RGB:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the hexadecimal value of a color in the color table.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ColorEntry\_Type">
2. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="RGB" type="xsd:string" use="required"/>
4. </xsd:complexType>

##### Colors\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that specifies the [color table](#Section_1fac45bfef104b29ada14acf47fed340) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**ColorEntry:** A [ColorEntry\_Type](#Section_e2bf0659fdaa400ba27e7f0995389235) element that specifies the colors available in a color table.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Colors\_Type">
2. <xsd:sequence>
3. <xsd:element name="ColorEntry" type="ColorEntry\_Type" minOccurs="1" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### CommentEntry\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [CommentList\_Type](#Section_02afbbd0887e4d40b9f6b840e827266b)

A complex type that specifies properties used to identify a comment in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Attributes:*

**AuthorID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that is a value that identifies the author. It MUST be equal to or greater than one.

**PageID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is a value that identifies the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) the comment is on. The comment MUST be contained in the drawing page specified by **PageID.**

**ShapeID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is a value that identifies the [shape](#Section_2995871af1b144e69754989fb760ee18) the comment is on. If no **ShapeID** is specified, the comment refers to the drawing page.

**Date:** An xsd:dateTime ([XMLSCHEMA2] section 3.2.7) attribute that specifies when a comment was created.

**EditDate:** An xsd:dateTime ([XMLSCHEMA2] section 3.2.7) attribute that specifies when a comment was last changed. The **EditDate** MUST be greater than or equal to the value of **Date**.

**Done:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies the current state of the comment. It MUST be equal to zero or one.

**CommentID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is a unique value that identifies the comment in a drawing page. It MUST be unique amongst all the **CommentEntry\_Type** child elements of the containing CommentList\_Type.

**AutoCommentType:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CommentEntry\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string">
4. <xsd:attribute name="AuthorID" type="xsd:unsignedInt" use="required"/>
5. <xsd:attribute name="PageID" type="xsd:unsignedInt" use="required"/>
6. <xsd:attribute name="ShapeID" type="xsd:unsignedInt"/>
7. <xsd:attribute name="Date" type="xsd:dateTime" use="required"/>
8. <xsd:attribute name="EditDate" type="xsd:dateTime"/>
9. <xsd:attribute name="Done" type="xsd:boolean"/>
10. <xsd:attribute name="CommentID" type="xsd:unsignedInt" use="required"/>
11. <xsd:attribute name="AutoCommentType" type="xsd:unsignedInt"/>
12. </xsd:extension>
13. </xsd:simpleContent>
14. </xsd:complexType>

##### CommentList\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Comments\_Type](#Section_e150a15c60c24ef98027a91d702f584a)

A complex type that specifies the comments in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**CommentEntry:** A [CommentEntry\_Type](#Section_6fac1d129c364e669dc904242178777e) element that specifies properties used to identify a comment in a web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CommentList\_Type">
2. <xsd:sequence>
3. <xsd:element name="CommentEntry" type="CommentEntry\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### Comments\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Comments](#Section_d9969bb54a2b4d68a4b720f6ef8c2ae3)

A complex type that specifies properties used to identify the authors and comments in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**AuthorList:** An [AuthorList\_Type](#Section_7f9457fdeb7a4f4e9ecdd82dd5855443) element that specifies the authors in a web drawing.

**CommentList:** A [CommentList\_Type](#Section_02afbbd0887e4d40b9f6b840e827266b) element that specifies the comments in a web drawing.

*Attributes:*

**ShowCommentTags:** An xsd:boolean ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.2) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Comments\_Type">
2. <xsd:sequence>
3. <xsd:element name="AuthorList" type="AuthorList\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="CommentList" type="CommentList\_Type" minOccurs="0" maxOccurs="1"/>
5. </xsd:sequence>
6. <xsd:attribute name="ShowCommentTags" type="xsd:boolean"/>
7. </xsd:complexType>

##### Connect\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Connects\_Type](#Section_35e2268d327c45749fbfb5e36a9c1bdd)

A complex type that is unused and MUST be ignored.

*Attributes:*

**FromSheet:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that is unused and MUST be ignored.

**FromCell:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**FromPart:** An xsd:int ([XMLSCHEMA2] section 3.3.17) attribute that is unused and MUST be ignored.

**ToSheet:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**ToCell:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**ToPart:** An xsd:int ([XMLSCHEMA2] section 3.3.17) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Connect\_Type">
2. <xsd:attribute name="FromSheet" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="FromCell" type="xsd:string"/>
4. <xsd:attribute name="FromPart" type="xsd:int"/>
5. <xsd:attribute name="ToSheet" type="xsd:unsignedInt" use="required"/>
6. <xsd:attribute name="ToCell" type="xsd:string"/>
7. <xsd:attribute name="ToPart" type="xsd:int"/>
8. </xsd:complexType>

##### Connects\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [PageContents\_Type](#Section_5f4ff60ec150429e83a95f7523074e2d)

A complex type that is unused and MUST be ignored.

*Child Elements:*

**Connect:** A Connect\_Type element that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Connects\_Type">
2. <xsd:sequence>
3. <xsd:element name="Connect" type="Connect\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### cp\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836)

A complex type that specifies the beginning of a text run, and specifies an index designating the set of [character properties](#Section_c5dd283696ad47959dc458db5ab84015) to use.

*Attributes:*

**IX:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the character properties used in the [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST be the **IX** attribute of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="cp\_Type">
2. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required"/>
3. </xsd:complexType>

##### CT\_FmtSchemeEx

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* **Ext** element as specified by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

*Child Elements:*

**schemeID:** A [CT\_SchemeID](#Section_c4fad8770c01403aaee826a0a46851c1) element that specifies the index of an effect scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) or a connector scheme dynamic theme component.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_FmtSchemeEx" oxsd:cname="StyleMatrixEx" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="schemeID" type="CT\_SchemeID" minOccurs="1" maxOccurs="1"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### CT\_FontProps

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_FontStyles](#Section_81028a97719a45eea8c5488378c5a000)

Specifies properties used to format a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553).

*Attributes:*

**style**: An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies properties used to format a text run. The value of the structure MUST be a bitwise OR combination of one or more of the values from the table in the [Style](#Section_a87e85eecf764e0ba09e638c871c28e2) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element.

*Child Elements:*

**color:** A **CT\_Color** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section A.2 that specifies color properties used to format a text run.

**extLst**: An a:CT\_OfficeArtExtensionList ([ISO/IEC29500-1:2016]section 20.1.2.2.15) type which is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_FontProps" oxsd:cname="FontProps" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="color" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
4. <xsd:element name="extLst" oxsd:cname="ext" type="a:CT\_OfficeArtExtensionList" minOccurs="0" maxOccurs="1" oxsd:dataStructure="optional"/>
5. </xsd:sequence>
6. <xsd:attribute name="style" type="xsd:unsignedInt" use="required" oxsd:cname="style"/>
7. </xsd:complexType>

##### CT\_FontStyles

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_FontStylesGroup](#Section_850ef476f82a4a8a9e06b92196699e39)

Specifies a set of properties used to format a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553).

*Child Elements:*

**fontProps:** A [CT\_FontProps](#Section_577dc0c30b234354a2fd91cf5eb85d4c) element that specifies properties used to format a text run.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_FontStyles" oxsd:cname="FontStyles" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="fontProps" oxsd:cname="fontProps" type="CT\_FontProps" minOccurs="3" maxOccurs="unbounded" />
4. </xsd:sequence>
5. </xsd:complexType>

##### CT\_FontStylesGroup

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* **Ext** element as specified by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

Specifies the properties used to format a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) in [shape](#Section_2995871af1b144e69754989fb760ee18)s.

*Child Elements:*

**connectorFontStyles:** A [CT\_FontStyles](#Section_81028a97719a45eea8c5488378c5a000) element that specifies the properties used to format a text run in a [connector](#Section_21a8f47c40324f1c912c1476cba071c0) shape.

**fontStyles**: A CT\_FontStyles element that specifies the properties used to format a text run in a non-connector shape.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

<xsd:complexType name="CT\_FontStylesGroup" oxsd:cname="FontStylesGroup" oxsd:cwrap="noTemplate">

1. <xsd:sequence>
2. <xsd:element name="connectorFontStyles" oxsd:cname="connectorFontStyles" type="CT\_FontStyles" minOccurs="1" maxOccurs="1" />
3. <xsd:element name="fontStyles" oxsd:cname="fontStyles" type="CT\_FontStyles" minOccurs="1" maxOccurs="1" />
4. </xsd:sequence>

</xsd:complexType>

##### CT\_LineEx

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_LineStyle](#Section_2df8e78693624739a3542be2d2a6c377)

A complex type that specifies [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) information of an effect scheme or a connector scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Attributes:*

**rndg:** An a:ST\_PositiveCoordinate ([[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.10.42) attribute that specifies the rounding radius of the outline of a [shape](#Section_2995871af1b144e69754989fb760ee18). The value of the structure MUST be greater than or equal to zero inches. The value of zero specifies that there is no rounding. A value greater than zero specifies that any corner between two line segments, a line segment and an elliptical arc, or two elliptical arcs within the outline is rounded with a radius equal to the value.

**start:** An xsd:unsignedByte ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.24) attribute that specifies an arrowhead at the first vertex of a one-dimensional shape.

The value of the structure MUST be specified by the table in the [BeginArrow](#Section_8f7d58be20e0433b841959add0650616) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, and it MUST NOT be 254.

**startSize:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that specifies the size of the arrowhead at the first vertex of a shape.

The value of the structure MUST be specified by the table in the [BeginArrowSize](#Section_9ea88ec87a3e4ea69caaa823f50f0707) Cell\_Type element.

**end:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that specifies an arrowhead at the last vertex of a one-dimensional shape.

The value of the structure MUST be specified by the table in the BeginArrow Cell\_Type element, and it MUST NOT be 254.

**endSize:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that specifies the size of the arrowhead at the last vertex of a shape.

The value of the structure MUST be specified by the table in the BeginArrowSize Cell\_Type element.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_LineEx" oxsd:cname="LineEx" oxsd:cwrap="noTemplate" oxsd:cexport="true">
2. <xsd:attribute name="rndg" type="a:ST\_PositiveCoordinate" use="optional" oxsd:cname="rounding"/>
3. <xsd:attribute name="start" type="xsd:unsignedByte" use="optional" oxsd:cname="startSymbol"/>
4. <xsd:attribute name="startSize" type="xsd:unsignedByte" use="optional" oxsd:cname="startSymbolSize"/>
5. <xsd:attribute name="end" type="xsd:unsignedByte" use="optional" oxsd:cname="endSymbol"/>
6. <xsd:attribute name="endSize" type="xsd:unsignedByte" use="optional" oxsd:cname="endSymbolSize"/>
7. </xsd:complexType>

##### CT\_LineStyle

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_SchemeLineStyles](#Section_127f9a08970b4a148f145d85e372685f)

Specifies [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) and [sketch effect set](#Section_a26dd56967ed4c30a435191752e08e9a) information of an effect scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) or a connector scheme dynamic theme component in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Child Elements:*

**lineEx:** A [CT\_LineEx](#Section_738d7ff8fdf2486fba869242c8814cc1) element that specifies the line properties information.

**sketch:** A [CT\_Sketch](#Section_141f797d86764d15beb3c5d3ed276ea9) element that specifies sketch effect set information.

**extLst:** An a:CT\_OfficeArtExtensionList ([[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065)section 20.1.2.2.15) type which is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_LineStyle" oxsd:cname="LineStyle" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="lineEx" oxsd:cname="lineEx" type="CT\_LineEx" minOccurs="1" maxOccurs="1"/>
4. <xsd:element name="sketch" oxsd:cname="sketch" type="CT\_Sketch" minOccurs="0" maxOccurs="1" oxsd:dataStructure="optional"/>
5. <xsd:element name="extLst" oxsd:cname="ext" type="a:CT\_OfficeArtExtensionList" minOccurs="0" maxOccurs="1" oxsd:dataStructure="optional"/>
6. </xsd:sequence>
7. </xsd:complexType>

##### CT\_LineStyles

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* **Ext** element as specified by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

*Child Elements:*

**fmtConnectorSchemeLineStyles**:A [CT\_SchemeLineStyles](#Section_127f9a08970b4a148f145d85e372685f) element that specifies [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) and [sketch effect set](#Section_a26dd56967ed4c30a435191752e08e9a) information of a connector scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

**fmtSchemeLineStyles**:A CT\_SchemeLineStyles element that specifies line properties and sketch effect set information of an effect scheme dynamic theme component in a dynamic theme.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_LineStyles" oxsd:cname="LineStyles" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="fmtConnectorSchemeLineStyles" oxsd:cname="fmtConnectorSchemeLineStyles" type="CT\_SchemeLineStyles" minOccurs="1" maxOccurs="1"/>
4. <xsd:element name="fmtSchemeLineStyles" oxsd:cname="fmtSchemeLineStyles" type="CT\_SchemeLineStyles" minOccurs="1" maxOccurs="1"/>
5. </xsd:sequence>
6. </xsd:complexType>

##### CT\_OfficeStyleSheet

*Target namespace:* http://schemas.openxmlformats.org/drawingml/2006/main

*Referenced by:* [Theme](#Section_6423f604179540c59b1926c5670263c0)

A complex type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065)section 20.1.6.9 that specifies a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

The following descendant elements of a **CT\_OfficeStyleSheet** element specified in [ISO/IEC29500-1:2016] section 20.1.6.9 are unused and MUST be ignored.

* **ObjectDefaults** element detailed by the **CT\_ObjectStyleDefaults** type specified in [ISO/IEC29500-1:2016] section 20.1.6.7.
* **ExtraClrSchemeLst** element detailed by the **CT\_ColorSchemeList** type specified in [ISO/IEC29500-1:2016] section 20.1.6.5.
* **Dk2** element detailed by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.10.
* **Lt2** element detailed by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.23.
* **Hlink** element detailed by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.19.
* **FolHlink** element detailed by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.15.
* **MajorFont** element detailed by the **CT\_FontCollection** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.24.
* **BgFillStyleLst** element detailed by the **CT\_BackgroundFillStyleList** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.7.
* **Camera** element detailed by the **CT\_Camera** type specified in [ISO/IEC29500-1:2016] section 20.1.5.5.
* **HueMod** element detailed by the **CT\_PositivePercentage** type specified in [ISO/IEC29500-1:2016] section 20.1.2.3.15.
* **CustClrLst** element detailed by the **CT\_CustomColorList** type specified in [ISO/IEC29500-1:2016] section 20.1.6.3.
* **HeadEnd** element detailed by the **CT\_LineEndProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.38.
* **TailEnd** element detailed by the **CT\_LineEndProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.57.
* **Round** element detailed by the **CT\_LineJoinRound** type specified in [ISO/IEC29500-1:2016] section 20.1.8.52.
* **PattFill** element detailed by the **CT\_PatternFillProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.47.
* **NoFill** element detailed by the **CT\_NoFillProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.44.
* **Miter** element detailed by the **CT\_LineJoinMiterProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.43.
* **CustDash** element detailed by the **CT\_DashStopList** type specified in [ISO/IEC29500-1:2016] section 20.1.8.21.
* **BlipFill** element detailed by the **CT\_BlipFillProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.14.
* **GrpFill** element detailed by the **CT\_GroupFillProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.35.
* **TileRect** element detailed by the **CT\_RelativeRect** type specified in [ISO/IEC29500-1:2016] section 20.1.8.59.
* **EffectDag** element detailed by the **CT\_EffectContainer** type specified in [ISO/IEC29500-1:2016] section 20.1.8.25.
* **Blur** element detailed by the **CT\_BlurEffect** type specified in [ISO/IEC29500-1:2016] section 20.1.8.15.
* **FillOverlay** element detailed by the **CT\_FillOverlayEffect** type specified in [ISO/IEC29500-1:2016] section 20.1.8.29.
* **PrstShdw** element detailed by the **CT\_PresetShadowEffect** type specified in [ISO/IEC29500-1:2016] section 20.1.8.49.

The attributes of the descendant elements of a **CT\_OfficeStyleSheet** element specified in [ISO/IEC29500-1:2016] section 20.1.6.9 listed in the following table are unused and MUST be ignored.

| Element | Attributes |
| --- | --- |
| **Lin** as specified by the **CT\_LinearShadeProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.41. | **Scaled** |
| **Ln** as specified by the **CT\_LineProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.2.2.24. | **Algn** |
| **LightRig** as specified by the **CT\_LightRig** type specified in [ISO/IEC29500-1:2016] section 20.1.5.9. | **Dir** |
| **Rot** as specified by the **CT\_SphereCoords** type specified in [ISO/IEC29500-1:2016] section 20.1.5.11. | **Lat** and **long** |
| **GradFill** as specified by the **CT\_GradientFillProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.33. | **Flip** |
| **OuterShdw** as specified by the **CT\_OuterShadowEffect** type specified in [ISO/IEC29500-1:2016] section 20.1.8.45. | **Algn**, **kx**, **ky**, **sx**, and **sy** |
| **Reflection** as specified by the **CT\_ReflectionEffect** type specified in [ISO/IEC29500-1:2016] section 20.1.8.50. | **Algn**, **dir**, **endA**, **fadeDir**, **kx**, **ky**, **rotWithShape**, **stPos**, **sx**, and **sy** |

*Child Elements:*

**themeElements** element detailed by the **CT\_BaseStyles** type specified in [ISO/IEC29500-1:2016]section §A.4.1. This element specifies the [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26)s of a dynamic theme.

**objectDefaults** element detailed by the **CT\_ObjectStyleDefaults** type specified in [ISO/IEC29500-1:2016] section 20.1.6.7.

**extraClrSchemeLst** element detailed by the **CT\_ColorSchemeList** type specified in[ISO/IEC29500-1:2016] section 20.1.6.5.

**custClrLst** element detailed by the **CT\_CustomColorList** type specified in [ISO/IEC29500-1:2016] section 20.1.6.3.

**extLst** element detailed by the **CT\_OfficeArtExtensionList** type specified in [ISO/IEC29500-1:2016] section 20.1.2.2.15.

*Attributes:*

**name**:An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of the dynamic theme.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_OfficeStyleSheet">
2. <xsd:sequence>
3. <xsd:element name="themeElements" type="CT\_BaseStyles" minOccurs="1" maxOccurs="1"/>
4. <xsd:element name="objectDefaults" type="CT\_ObjectStyleDefaults" minOccurs="0" maxOccurs="1"/>
5. <xsd:element name="extraClrSchemeLst" type="CT\_ColorSchemeList" minOccurs="0" maxOccurs="1"/>
6. <xsd:element name="custClrLst" type="CT\_CustomColorList" minOccurs="0" maxOccurs="1"/>
7. <xsd:element name="extLst" type="CT\_OfficeArtExtensionList" minOccurs="0" maxOccurs="1"/>
8. </xsd:sequence>
9. <xsd:attribute name="name" type="xsd:string" use="optional" default=""/>
10. </xsd:complexType>

##### CT\_SchemeID

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_ThemeScheme](#Section_530218d622c849fab0002a442bd2194d), [CT\_FmtSchemeEx](#Section_93fe6e0c6e3b46b596850e8d55373b75), and **ext** element detailed by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

Specifies the index of a color scheme, font scheme, effect scheme, connector scheme, or primary scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9), or the GUID of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2).

*Attributes:*

**schemeEnum:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the one-based index of a color scheme, font scheme, effect scheme, connector scheme, or primary scheme dynamic theme component. If the value of the structure is equal to 65535, the GUID of a custom dynamic theme color scheme is specified by the **schemeGUID** attribute.

**schemeGUID:** An a:ST\_Guid ([ISO/IEC29500-1:2016] section 22.9.2.4) attribute that specifies the GUID of a custom dynamic theme color scheme. If the value of the **schemeEnum** attribute is not equal to 65535, this attribute is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_SchemeID" oxsd:cname="SchemeID" oxsd:cwrap="noTemplate">
2. <xsd:attribute name="schemeEnum" type="xsd:unsignedInt" use="optional" oxsd:cname="enum"/>
3. <xsd:attribute name="schemeGUID" type="a:ST\_Guid" use="optional" oxsd:cname="guid"/>
4. </xsd:complexType>

##### CT\_SchemeLineStyles

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_LineStyles](#Section_31d1cb6777cc4277bdb032072f9d68d5)

Specifies a set of [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) and [sketch effect set](#Section_a26dd56967ed4c30a435191752e08e9a) information of an effect scheme or connector scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Child Elements:*

**lineStyle:** A [CT\_LineStyle](#Section_2df8e78693624739a3542be2d2a6c377) element that specifies line properties and sketch effect set information of an effect scheme or connector scheme dynamic theme component.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_SchemeLineStyles" oxsd:cname="SchemeLineStyles" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="lineStyle" oxsd:cname="lineStyle" type="CT\_LineStyle" minOccurs="3" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### CT\_Sketch

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_LineStyle](#Section_2df8e78693624739a3542be2d2a6c377)

A complex type that specifies [sketch effect set](#Section_a26dd56967ed4c30a435191752e08e9a) information of an effect scheme or connector scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Attributes:*

**lnAmp:** An a:ST\_PositiveFixedPercentage ([[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 22.9.2.10) attribute that specifies the amplitude of the path perturbations for a sketch effect set. The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no perturbation to the path; a value of one specifies maximum perturbation.

**fillAmp:** An a:ST\_PositiveFixedPercentage ([ISO/IEC29500-1:2016] section 22.9.2.10) attribute that specifies the amplitude of the fill perturbations for a sketch effect set. The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no perturbation to the fill; a value of one specifies maximum perturbation.

**lnWeight:** An a:ST\_PositiveCoordinate ([ISO/IEC29500-1:2016] section 22.1.10.42) attribute that specifies the amplitude of the path perturbations for a sketch effect set. The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no perturbation to the path; a value of one specifies maximum perturbation.

**numPts:** An xsd:unsignedByte ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.24) attribute that specifies the number of points, distributed uniformly across each path segment of a [shape](#Section_2995871af1b144e69754989fb760ee18), where perturbations are performed for a sketch effect set. It MUST have a value greater than or equal to zero and less than or equal to 25, with a default value of five.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_Sketch" oxsd:cname="Sketch" oxsd:cwrap="noTemplate" oxsd:cexport="true">
2. <xsd:attribute name="lnAmp" type="a:ST\_PositiveFixedPercentage" use="optional" oxsd:cname="lnAmp"/>
3. <xsd:attribute name="fillAmp" type="a:ST\_PositiveFixedPercentage" use="optional" oxsd:cname="fillAmp"/>
4. <xsd:attribute name="lnWeight" type="a:ST\_PositiveCoordinate" use="optional" oxsd:cname="lnWeight"/>
5. <xsd:attribute name="numPts" type="xsd:unsignedByte" use="optional" oxsd:cname="numPts"/>
6. </xsd:complexType>

##### CT\_ThemeScheme

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* **Ext** element as detailed by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

Specifies the primary scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Child Elements:*

**schemeID:** A [CT\_SchemeID](#Section_c4fad8770c01403aaee826a0a46851c1) element that specifies the index of the primary scheme dynamic theme component.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_ThemeScheme" oxsd:cname="ThemeScheme" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="schemeID" type="CT\_SchemeID" minOccurs="1" maxOccurs="1"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### CT\_VarClrScheme

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_VariationClrSchemeLst](#Section_031d022c328840d4a3e9679a6e6a927b)

Specifies a color scheme list of a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575).

*Attributes:*

**monotone:** An xsd:boolean ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.2) attribute that specifies [multiformat](#Section_3109f5643c584956b2d17995824f5343) information of a [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9). True if scheme is monotone; False otherwise.

*Child Elements:*

**VarColor1:** A **CT\_Color** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section A.2 that specifies a color property.

**VarColor2:** A **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 that specifies a color property.

**VarColor3:** A **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 that specifies a color property.

**VarColor4:** A **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 that specifies a color property.

**VarColor5:** A **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 that specifies a color property.

**VarColor6:** A **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 that specifies a color property.

**VarColor7:** A **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 that specifies a color property.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_VarClrScheme" oxsd:cname="VariationColorScheme" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="varColor1" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
4. <xsd:element name="varColor2" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
5. <xsd:element name="varColor3" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
6. <xsd:element name="varColor4" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
7. <xsd:element name="varColor5" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
8. <xsd:element name="varColor6" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
9. <xsd:element name="varColor7" type="a:CT\_Color" minOccurs="1" maxOccurs="1"/>
10. <xsd:element name="extLst" oxsd:cname="ext" type="a:CT\_OfficeArtExtensionList" minOccurs="0" maxOccurs="1" oxsd:dataStructure="optional"/>
11. </xsd:sequence>
12. <xsd:attribute name="monotone" type="xsd:boolean" use="optional" default="false"/>
13. </xsd:complexType>

##### CT\_VariationClrSchemeLst

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* **Ext** element as detailed by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

Specifies four distinct color scheme lists of four distinct [dynamic theme variants](#Section_79aed9f85d10403891067d1927fa0575) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Child Elements:*

**VariationClrScheme:** A [CT\_VarClrScheme](#Section_2607c298d88146179138cb89177a37cf) type that specifies a color scheme list of a dynamic theme variant.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_VariationClrSchemeLst" oxsd:cname="VariationColorSchemeList" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="variationClrScheme" oxsd:cname="variationClrScheme" type="CT\_VarClrScheme" minOccurs="4" maxOccurs="unbounded" />
4. </xsd:sequence>
5. </xsd:complexType>

##### CT\_VariationStyle

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a)

Specifies a style property of a style scheme list of a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575).

*Attributes:*

**fillIdx:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that indirectly specifies the value of the properties of the [QuickStyleFillMatrix](#Section_25689058b1e74d3ca8330a4c7180f5f2) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element.

**lineIdx:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that indirectly specifies the value of the properties of the [QuickStyleLineMatrix](#Section_edfd9f33fea34bf58cd5a91a3d677b03) Cell\_Type element.

**effectIdx:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that indirectly specifies the value of the properties of the [QuickStyleEffectsMatrix](#Section_92238d7b5ecc48ed8f2f5dc577a4a11c) Cell\_Type element.

**fontIdx:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute indirectly specifies the value of the properties of the [QuickStyleFontMatrix](#Section_14da1dc4afde4cc58670956687bc8c14) Cell\_Type element.

*Child Elements:*

**extLst**: An **a:CT\_OfficeArtExtensionList** ([[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065)section 20.1.2.2.15) type which is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_VariationStyle" oxsd:cname="VariationStyle" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="extLst" oxsd:cname="ext" type="a:CT\_OfficeArtExtensionList" minOccurs="0" maxOccurs="1" oxsd:dataStructure="optional"/>
4. </xsd:sequence>
5. <xsd:attribute name="fillIdx" type="xsd:unsignedInt" use="required"/>
6. <xsd:attribute name="lineIdx" type="xsd:unsignedInt" use="required"/>
7. <xsd:attribute name="effectIdx" type="xsd:unsignedInt" use="required"/>
8. <xsd:attribute name="fontIdx" type="xsd:unsignedInt" use="required"/>
9. </xsd:complexType>

##### CT\_VariationStyleScheme

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* [CT\_VariationStyleSchemeLst](#Section_5bec143bb68248aa89c8d9545b604624)

Specifies a style scheme list of a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575).

*Attributes:*

**embellishment:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies [embellishment](#Section_3109f5643c584956b2d17995824f5343) information of a dynamic theme variant in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Child Elements:*

**VarStyle:** A [CT\_VariationStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) type that specifies a style property of a style scheme list of a dynamic theme variant.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_VariationStyleScheme" oxsd:cname="VariationStyleScheme" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="varStyle" oxsd:cname="varStyle" type="CT\_VariationStyle" minOccurs="4" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="embellishment" type="xsd:unsignedInt"/>
6. </xsd:complexType>

##### CT\_VariationStyleSchemeLst

*Target namespace:* http://visThemeSchemaUri

*Referenced by:* **Ext** element as detailed by the **CT\_OfficeArtExtension** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.2.14.

Specifies four distinct style scheme lists of four distinct [dynamic theme variants](#Section_79aed9f85d10403891067d1927fa0575) in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

*Child Elements:*

**VariationStyleScheme:** A [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) type that specifies a style scheme list of a dynamic theme variant.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CT\_VariationStyleSchemeLst" oxsd:cname="VariationStyleSchemeList" oxsd:cwrap="noTemplate">
2. <xsd:sequence>
3. <xsd:element name="variationStyleScheme" oxsd:cname="variationStyleScheme" type="CT\_VariationStyleScheme" minOccurs="4" maxOccurs="unbounded" />
4. </xsd:sequence>
5. </xsd:complexType>

##### CustomMenusFile\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CustomMenusFile\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### CustomToolbarsFile\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="CustomToolbarsFile\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### Data\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Data\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### DataColumn\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataColumns\_Type](#Section_1fc5f6c5c3d84ef78aa716fb85e69b68)

A complex type that specifies a [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) in a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c).

*Attributes:*

**ColumnNameID:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the identifier of the field. It MUST be unique amongst all the **DataColumn\_Type** child elements of the containing DataColumns\_Type.

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the name of the [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) items mapped to this field in each shape that is bound to a [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) in the recordset as described in [data binding](#Section_9ab2ddda33b5434d9256bd769e300cd1). It MUST be unique amongst all the **DataColumn\_Type** child elements of the containing DataColumns\_Type.

**Label:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**OrigLabel:** An xsd:string ([XMLSCHEMA2] section 3.2.1) that is unused and MUST be ignored.

**LangID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**Calendar:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**DataType:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that specifies the type of the data of this field. This value MUST be specified by [vDataType](#Section_36ab75e38cec42c2a46a009dfd8c21b2).

**UnitType:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**Currency:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**Degree:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**DisplayWidth:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**DisplayOrder:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**Mapped:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**Hyperlink:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DataColumn\_Type">
2. <xsd:attribute name="ColumnNameID" type="xsd:string" use="required"/>
3. <xsd:attribute name="Name" type="xsd:string" use="required"/>
4. <xsd:attribute name="Label" type="xsd:string" use="required"/>
5. <xsd:attribute name="OrigLabel" type="xsd:string"/>
6. <xsd:attribute name="LangID" type="xsd:unsignedInt"/>
7. <xsd:attribute name="Calendar" type="xsd:unsignedShort"/>
8. <xsd:attribute name="DataType" type="xsd:unsignedShort"/>
9. <xsd:attribute name="UnitType" type="xsd:string"/>
10. <xsd:attribute name="Currency" type="xsd:unsignedShort"/>
11. <xsd:attribute name="Degree" type="xsd:unsignedInt"/>
12. <xsd:attribute name="DisplayWidth" type="xsd:unsignedInt"/>
13. <xsd:attribute name="DisplayOrder" type="xsd:unsignedInt"/>
14. <xsd:attribute name="Mapped" type="xsd:boolean"/>
15. <xsd:attribute name="Hyperlink" type="xsd:boolean"/>
16. </xsd:complexType>

##### DataColumns\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea)

A complex type that specifies a collection of [**fields**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) in a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c).

*Child Elements:*

**DataColumn:** A [DataColumn\_Type](#Section_97e06397990447619be3884e39045969) element that specifies a field in a recordset.

*Attributes:*

**SortColumn:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that is unused and MUST be ignored.

**SortAsc:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DataColumns\_Type">
2. <xsd:sequence>
3. <xsd:element name="DataColumn" type="DataColumn\_Type" minOccurs="1" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="SortColumn" type="xsd:string"/>
6. <xsd:attribute name="SortAsc" type="xsd:boolean"/>
7. </xsd:complexType>

##### DataConnection\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataConnections\_Type](#Section_026a97c49edd4b3da00e342157fb3ebd)

A complex type that specifies a [data connection](#Section_0c83304b6f034218bfb1a49d51060e9c).

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of a data connection. It MUST be unique amongst all the DataConnection\_Type child elements of the containing DataConnections\_Type.

**FileName:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the full path of an [**Office data connection (ODC) file**](#gt_e6fb952a-b6b6-40af-ad1b-ea6cf97da509) or [**data source**](#gt_e091613c-6901-4874-b9b2-27273ead1075) file. If the type of data source specified in the **ConnectionString** attribute corresponds to a [**list**](#gt_04ce231e-214c-44fd-b7ba-7cc19eee79bf) or Custom[**add-in**](#gt_a3be101e-9d37-484a-a5e6-b70d559146c6), the value of this attribute MUST be an empty string.

**ConnectionString:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the [**connection string**](#gt_03a9d0ca-2f10-4f3d-b910-052714a96f7d) to a data source. It MUST be a valid connection string as specified in [[MS-ODBCSTR]](%5bMS-ODBCSTR%5d.pdf#Section_13b4e848b36c4b11acced6bf199d5391). If the type of the data source specified in the connection string is listed in the following table, the syntax of the connection string MUST match the syntax specified in the following table. Otherwise, the **DataConnection\_Type** MUST be ignored.

|  |  |
| --- | --- |
| Type of data source | Syntax |
| [**OLE DB**](#gt_333f4fb1-4882-48df-bce6-f9961b408f31) | MUST be a valid connection string as specified in [MS-ODBCSTR] |
| [**ODBC**](#gt_7883fa02-8dc0-4154-894f-fe3a7bff153e) | MUST be a valid connection string as specified in [MS-ODBCSTR] |
| List | MUST be in the following format:  "PROVIDER=WSS;DATABASE=*list URL*;LIST={*list GUID*};*viewparam*"   * *list URL* is the [**URL**](#gt_433a4fb7-ef84-46b0-ab65-905f5e3a80b1) of a list. * *list GUID* is the [**GUID**](#gt_f49694cc-c350-462d-ab8e-816f0103c6c1) of the list. * *viewparam* MUST be in the format "VIEW={*view GUID*};", if the data source is a [**view**](#gt_3f793b0b-9509-4df0-89f9-92f07954beb8) of a list, where *view GUID* is the GUID of the view; otherwise, *viewparam* MUST be an empty string. |
| [**Workbook**](#gt_343c4660-90e1-4d86-b9cc-5007075d9dfe) | MUST be a valid connection string as specified in [MS-ODBCSTR] and MUST contain the following key-value pairs:  "DataModule=Microsoft.Office.Visio.Server.EcsDataHandler,Microsoft.Office.Visio.Server;Data Source=*workbook URL*;Extended Properties='HDR=*hdrvalue*;';"   * *workbook URL* is the URL of a workbook. * *hdrvalue* equals YES, if the first [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of data is the [**header row**](#gt_42711baf-2679-445d-a994-0eadd91b1a38);otherwise, it equals NO.   Other key-value pairs are unused and MUST be ignored. |
| **Custom** add-in | MUST be a valid connection string as specified in [MS-ODBCSTR] and MUST be in the following format:  "DataModule=*class name,assembly name*;Add-in key*=value pairs*;"   * *class name* is a [**class name**](#gt_c7d23c85-a7a1-412b-93d5-572ea0918303). * *assembly name* is an [**assembly name**](#gt_2e4c6e9e-9189-4150-a9f6-3b3c366f75cf). * *value pairs* is a semicolon-separated set of key-value pairs specific to the add-in. |

**Command:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the [**query**](#gt_37fbc661-f744-48fa-9d8e-f34513cab9c2) in a data connection.

**FriendlyName:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**Timeout:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**AlwaysUseConnectionFile:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DataConnection\_Type">
2. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="FileName" type="xsd:string" use="required"/>
4. <xsd:attribute name="ConnectionString" type="xsd:string"/>
5. <xsd:attribute name="Command" type="xsd:string"/>
6. <xsd:attribute name="FriendlyName" type="xsd:string"/>
7. <xsd:attribute name="Timeout" type="xsd:unsignedInt"/>
8. <xsd:attribute name="AlwaysUseConnectionFile" type="xsd:boolean"/>
9. </xsd:complexType>

##### DataConnections\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataConnections](#Section_16d2501b923c4b718896aa70f16d71fc)

A complex type that specifies a collection of [data connections](#Section_0c83304b6f034218bfb1a49d51060e9c) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**DataConnection:** A [DataConnection\_Type](#Section_56d4076aa2af442284bc402932fbe06d) element that specifies a data connection.

*Attributes:*

**NextID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the next sequential identifier of a DataConnection\_Type. It MUST be a value that is one greater than the largest value found amongst the **ID** attributes of all DataConnection\_Type elements in this collection.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DataConnections\_Type">
2. <xsd:sequence>
3. <xsd:element name="DataConnection" type="DataConnection\_Type" minOccurs="1" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="NextID" type="xsd:unsignedInt" use="required"/>
6. </xsd:complexType>

##### DataRecordSet\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSets\_Type](#Section_3d9558e7891447c590b1175162a40aa9)

A complex type that specifies a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) and the [data binding](#Section_9ab2ddda33b5434d9256bd769e300cd1) between that recordset and [shapes](#Section_2995871af1b144e69754989fb760ee18) in [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

*Child Elements:*

**Rel:** A [Rel\_Type](#Section_34f54be6adb24aa8a6837d1db7a25d46) element that is unused and MUST be ignored.

**DataColumns:** A [DataColumns\_Type](#Section_1fc5f6c5c3d84ef78aa716fb85e69b68) element that specifies the [**fields**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) of the recordset.

**PrimaryKey:** A [PrimaryKey\_Type](#Section_a503e916c0d240429d30e7dc4d6cfb65) element that specifies a component of the [**primary key**](#gt_e4d8c530-39c1-4fc6-8ccc-8d51a221158d) of the recordset. If the **RowOrder** attribute does not exist or equals zero, there MUST be at least one occurrence of this element. If the **RowOrder** attribute exists and is equal to one, this element MUST NOT exist.

**RowMap:** A [RowMap\_Type](#Section_ffc00766ecc44e5cb5eeedda9bc0f58e) element that specifies the data binding between a [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) in the recordset and a shape.

**RefreshConflict:** A [RefreshConflict\_Type](#Section_49fa82b3fb8641199f02aed0e648235f) element that is unused and MUST be ignored.

**AutoLinkComparison:** An [AutoLinkComparison\_Type](#Section_7a7ecc1c5d6d43d5ad7e1a4fc591d079) element that is unused and MUST be ignored.

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of the recordset. It MUST be unique amongst all the DataRecordSet\_Type child elements of the containing DataRecordSets\_Type.

**ConnectionID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the [data connection](#Section_0c83304b6f034218bfb1a49d51060e9c) that corresponds to the recordset. It MUST be the value of the **ID** attribute of the [DataConnection\_Type](#Section_56d4076aa2af442284bc402932fbe06d) element associated with the data connection.

**Command:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the [**query**](#gt_37fbc661-f744-48fa-9d8e-f34513cab9c2) for the data connection that corresponds to the recordset.

**Options:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies additional information about the recordset. The value MUST be zero or a bitwise OR combination of one or more values in the following table.

| Value | Description |
| --- | --- |
| 1 | Specifies that the recordset does not participate in [refresh](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) operations. |
| 2 | Unused, and MUST be ignored. |
| 4 | Unused, and MUST be ignored. |
| 8 | Unused, and MUST be ignored. |
| 16 | Unused, and MUST be ignored. |

**TimeRefreshed:** An xsd:dateTime ([XMLSCHEMA2] section 3.2.7) attribute that is unused and MUST be ignored.

**NextRowID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the display name of the recordset.

**RowOrder:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies whether the recordset uses the row number as the primary key to bind rows of data in the recordset to shapes. It MUST be zero or one. A value of one specifies that the row number is used. If one or more PrimaryKey\_Type child elements exist, this attribute MUST NOT exist or MUST be zero. If no PrimaryKey\_Type child elements exist, this attribute MUST exist and MUST be one.

**RefreshOverwriteAll:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies the conditions where a refresh operation on the recordset will update [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) values in shapes bound to the rows of the recordset. It MUST be equal to zero or one. A value of one specifies that data in shapes bound to the rows of the recordset will be updated with new data from the refreshed rows. A value of zero specifies that only the shape data values where there is a corresponding [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element with an **N** attribute equal to "DataLinked" and a **V** attribute equal to "1" will be updated with new data from the refreshed row.

**RefreshNoReconciliationUI:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**RefreshInterval:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**ReplaceLinks:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**Checksum:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DataRecordSet\_Type">
2. <xsd:sequence>
3. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1"/>
4. <xsd:element name="DataColumns" type="DataColumns\_Type" minOccurs="1" maxOccurs="1"/>
5. <xsd:element name="PrimaryKey" type="PrimaryKey\_Type" minOccurs="0" maxOccurs="unbounded"/>
6. <xsd:element name="RowMap" type="RowMap\_Type" minOccurs="0" maxOccurs="unbounded"/>
7. <xsd:element name="RefreshConflict" type="RefreshConflict\_Type" minOccurs="0" maxOccurs="unbounded"/>
8. <xsd:element name="AutoLinkComparison" type="AutoLinkComparison\_Type" minOccurs="0" maxOccurs="unbounded"/>
9. </xsd:sequence>
10. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
11. <xsd:attribute name="ConnectionID" type="xsd:unsignedInt"/>
12. <xsd:attribute name="Command" type="xsd:string"/>
13. <xsd:attribute name="Options" type="xsd:unsignedInt"/>
14. <xsd:attribute name="TimeRefreshed" type="xsd:dateTime"/>
15. <xsd:attribute name="NextRowID" type="xsd:unsignedInt"/>
16. <xsd:attribute name="Name" type="xsd:string"/>
17. <xsd:attribute name="RowOrder" type="xsd:boolean"/>
18. <xsd:attribute name="RefreshOverwriteAll" type="xsd:boolean"/>
19. <xsd:attribute name="RefreshNoReconciliationUI" type="xsd:boolean"/>
20. <xsd:attribute name="RefreshInterval" type="xsd:unsignedInt"/>
21. <xsd:attribute name="ReplaceLinks" type="xsd:unsignedInt"/>
22. <xsd:attribute name="Checksum" type="xsd:unsignedInt"/>
23. </xsd:complexType>

##### DataRecordSets\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSets](#Section_33cbaaf28df74081bb5b55af82b063e4)

A complex type that specifies a collection of [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) and the [data binding](#Section_9ab2ddda33b5434d9256bd769e300cd1) between those recordsets and [shapes](#Section_2995871af1b144e69754989fb760ee18) in [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

*Child Elements:*

**DataRecordSet:** A [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element that specifies a recordset and the data binding between that recordset and shapes in drawing pages.

*Attributes:*

**NextID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that is unused and MUST be ignored.

**ActiveRecordsetID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**DataWindowOrder:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DataRecordSets\_Type">
2. <xsd:sequence>
3. <xsd:element name="DataRecordSet" type="DataRecordSet\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="NextID" type="xsd:unsignedInt" use="required"/>
6. <xsd:attribute name="ActiveRecordsetID" type="xsd:unsignedInt"/>
7. <xsd:attribute name="DataWindowOrder" type="xsd:string"/>
8. </xsd:complexType>

##### DocumentSettings\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that is unused and MUST be ignored.

*Child Elements:*

**GlueSettings:** A [GlueSettings\_Type](#Section_ba90a38eab2b47dcbdf3523e798ecac5) element that is unused and MUST be ignored.

**SnapSettings:** A [SnapSettings\_Type](#Section_3191cdcca7b04123ad8fd600a782aeb8) element that is unused and MUST be ignored.

**SnapExtensions:** A [SnapExtensions\_Type](#Section_b7ee56287d9045849a1f89de5fc4b81d) element that is unused and MUST be ignored.

**SnapAngles:** A [SnapAngles\_Type](#Section_70d9234a0f314daba00dadc017926a5f) element that is unused and MUST be ignored.

**DynamicGridEnabled:** A [DynamicGridEnabled\_Type](#Section_df567a84f6a0404bb39058cb2db1927b) element that is unused and MUST be ignored.

**ProtectStyles:** A [ProtectStyles\_Type](#Section_e70a38220b6b4b288ff09da4ebe29684) element that is unused and MUST be ignored.

**ProtectShapes:** A [ProtectShapes\_Type](#Section_6ece27ddbe624c67b0f657eaee881e1d) element specifies whether a [shape](#Section_2995871af1b144e69754989fb760ee18) is [selectable](#Section_0a5a7ac088504e078c3cfeb4db36dcc7).

**ProtectMasters:** A [ProtectMasters\_Type](#Section_6c56e99a200d4fbd90d327544c5011ac) element that is unused and MUST be ignored.

**ProtectBkgnds:** A [ProtectBkgnds\_Type](#Section_e81c37612f74480b99678c16721fb0e9) element that is unused and MUST be ignored.

**CustomMenusFile:** A [CustomMenusFile\_Type](#Section_801ca9a150c34347897d5f2e73e81821) element that is unused and MUST be ignored.

**CustomToolbarsFile:** A [CustomToolbarsFile\_Type](#Section_10b5dd6d34c5444585a142fc33dda0f0) element that is unused and MUST be ignored.

**AttachedToolbars:** An [AttachedToolbars\_Type](#Section_600c7627a095470c8e23c01848751dae) element that is unused and MUST be ignored.

*Attributes:*

**TopPage:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that is unused and MUST be ignored.

**DefaultTextStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**DefaultLineStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**DefaultFillStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**DefaultGuideStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DocumentSettings\_Type">
2. <xsd:all>
3. <xsd:element name="GlueSettings" type="GlueSettings\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="SnapSettings" type="SnapSettings\_Type" minOccurs="0" maxOccurs="1"/>
5. <xsd:element name="SnapExtensions" type="SnapExtensions\_Type" minOccurs="0" maxOccurs="1"/>
6. <xsd:element name="SnapAngles" type="SnapAngles\_Type" minOccurs="0" maxOccurs="1"/>
7. <xsd:element name="DynamicGridEnabled" type="DynamicGridEnabled\_Type" minOccurs="0" maxOccurs="1"/>
8. <xsd:element name="ProtectStyles" type="ProtectStyles\_Type" minOccurs="0" maxOccurs="1"/>
9. <xsd:element name="ProtectShapes" type="ProtectShapes\_Type" minOccurs="0" maxOccurs="1"/>
10. <xsd:element name="ProtectMasters" type="ProtectMasters\_Type" minOccurs="0" maxOccurs="1"/>
11. <xsd:element name="ProtectBkgnds" type="ProtectBkgnds\_Type" minOccurs="0" maxOccurs="1"/>
12. <xsd:element name="CustomMenusFile" type="CustomMenusFile\_Type" minOccurs="0" maxOccurs="1"/>
13. <xsd:element name="CustomToolbarsFile" type="CustomToolbarsFile\_Type" minOccurs="0" maxOccurs="1"/>
14. <xsd:element name="AttachedToolbars" type="AttachedToolbars\_Type" minOccurs="0" maxOccurs="1"/>
15. </xsd:all>
16. <xsd:attribute name="TopPage" type="xsd:unsignedInt"/>
17. <xsd:attribute name="DefaultTextStyle" type="xsd:unsignedInt"/>
18. <xsd:attribute name="DefaultLineStyle" type="xsd:unsignedInt"/>
19. <xsd:attribute name="DefaultFillStyle" type="xsd:unsignedInt"/>
20. <xsd:attribute name="DefaultGuideStyle" type="xsd:unsignedInt"/>
21. </xsd:complexType>

##### DocumentSheet\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that specifies properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

**Section:** A [Section\_Type](#Section_735b599d1359476785931c508a885779) element that specifies a collection of related properties.

*Attributes:*

**Name:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-dependent name of the DocumentSheet\_Type.

**NameU:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-independent name of the DocumentSheet\_Type.

**IsCustomName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IsCustomNameU:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**UniqueID:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**LineStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) from which to [inherit](#Section_59214758549c4f99a4dede2bf5fb08d3) line formatting. It MUST be the value of the **ID** attribute associated with a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) in the web drawing.

**FillStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit fill formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

**TextStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit text formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DocumentSheet\_Type">
2. <xsd:complexContent>
3. <xsd:extension base="Sheet\_Type">
4. <xsd:attribute name="Name" type="xsd:string"/>
5. <xsd:attribute name="NameU" type="xsd:string"/>
6. <xsd:attribute name="IsCustomName" type="xsd:boolean"/>
7. <xsd:attribute name="IsCustomNameU" type="xsd:boolean"/>
8. <xsd:attribute name="UniqueID" type="xsd:string"/>
9. </xsd:extension>
10. </xsd:complexContent>
11. </xsd:complexType>

##### DynamicGridEnabled\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="DynamicGridEnabled\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:boolean"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### Extensions\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Extensions](#Section_741970fc73db4ab298d82d30e31d5357)

A complex type that specifies [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) that are not specified in this specification.

*Child Elements:*

**CellDef:** A [CellDef\_Type](#Section_54c859c5a4004f699a66cffab531a6d3) element that specifies the definition of a cell that is not specified in this specification.

**FunctionDef:** A [FunctionDef\_Type](#Section_a535a1b0612d43afb5c76aaa0d00d794) element that specifies the definition of a [function token](#Section_71b8cdb618854fa2a75016d6626054f4) that is not specified in this specification.

**SectionDef:** A [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348) element that specifies the definition of a section that is not specified in this specification.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Extensions\_Type">
2. <xsd:sequence>
3. <xsd:element name="CellDef" type="CellDef\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="FunctionDef" type="FunctionDef\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. <xsd:element name="SectionDef" type="SectionDef\_Type" minOccurs="0" maxOccurs="unbounded"/>
6. </xsd:sequence>
7. </xsd:complexType>

##### FaceName\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [FaceNames\_Type](#Section_f6b0e8dcfa2648bd812a937da904b562)

A complex type that specifies a [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) from the [font table](#Section_96277f8252314f46bd64e0e5a496df19) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Attributes:*

**NameU:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of the font as a [**UTF-16**](#gt_4c9eef52-69d4-43e7-ac04-ff1fe43a94fb) [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) string.

**UnicodeRanges:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the Unicode range of the font.

**CharSets:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the set of supported [**character sets**](#gt_5004b992-4a9c-41c9-b65c-b2e7a2b04204) for the font.

**Panos:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the PANOSE signature for the font. The structure of the string is specified in [vPanose](#Section_c1f01e5af6ef421f823fa2ac0d6f956d) structure. If the **Panose** attribute exists, then this attribute is unused and MUST be ignored.

**Panose:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the PANOSE signature for the font. The structure of the string is specified in the vPanose structure.

**Flags:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FaceName\_Type">
2. <xsd:attribute name="NameU" type="xsd:string" use="required"/>
3. <xsd:attribute name="UnicodeRanges" type="xsd:string"/>
4. <xsd:attribute name="CharSets" type="xsd:string"/>
5. <xsd:attribute name="Panos" type="xsd:string"/>
6. <xsd:attribute name="Panose" type="xsd:string"/>
7. <xsd:attribute name="Flags" type="xsd:unsignedInt"/>
8. </xsd:complexType>

##### FaceNames\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that specifies the [font table](#Section_96277f8252314f46bd64e0e5a496df19) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**FaceName:** A [FaceName\_Type](#Section_56d67fa7f07c43389eef3343b2cb1c7f) element that specifies a [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) from the font table of the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FaceNames\_Type">
2. <xsd:sequence>
3. <xsd:element name="FaceName" type="FaceName\_Type" minOccurs="1" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### fld\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836)

A complex type that specifies a [text field](#Section_511cd5d9640846e4b16b42d513a07558) in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553).

*Attributes:*

**IX:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the text field to use. It MUST be the **IX** attribute of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="fld\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string">
4. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required"/>
5. </xsd:extension>
6. </xsd:simpleContent>
7. </xsd:complexType>

##### FooterCenter\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FooterCenter\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### FooterLeft\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FooterLeft\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### FooterMargin\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

*Attributes:*

**Unit:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FooterMargin\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:double">
4. <xsd:attribute name="Unit" type="xsd:string"/>
5. </xsd:extension>
6. </xsd:simpleContent>
7. </xsd:complexType>

##### FooterRight\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FooterRight\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### ForeignData\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that specifies the [image](#Section_c7915a6e1cd84633ad57261c2da081ae) of a [shape](#Section_2995871af1b144e69754989fb760ee18).

*Child Elements:*

**Rel:** A [Rel\_Type](#Section_34f54be6adb24aa8a6837d1db7a25d46) element that specifies a [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) to a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) containing the image data.

*Attributes:*

**ForeignType:** An xsd:token ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.2) attribute that specifies the type of the image. It MUST be equal to a value from the following table.

| Value | Meaning |
| --- | --- |
| Bitmap | The format of the image specified by the **Rel** child element is [**bitmap (BMP)**](#gt_15997d30-1146-484b-bedb-1453466718de), [**Graphics Interchange Format (GIF)**](#gt_ee8059ce-b978-451e-a0cd-33fa7fbb5845), [**Joint Photographic Experts Group (JPEG)**](#gt_5eda1f18-8071-4b27-ab0f-07f1fb79199d), [**Portable Network Graphics (PNG)**](#gt_212c87ce-40ba-4311-be2a-494f1a116604) or [**TIFF**](#gt_eddadea9-c278-4d16-9279-f222df2cb735). |
| EnhMetaFile | The format of the image specified by the **Rel** child element is [**enhanced metafile format (EMF)**](#gt_d9d0bff9-d270-4528-9081-fe51db809c36). |
| Ink | The image specified by the **Rel** child element is unused and the containing shape is invisible. |
| Object | The format of the image specified by the **Rel** child element is unsupported. If the unsupported part itself has a relationship to a [fallback image](#Section_df1d23b86a304991bfeb062f265ab5a1) part and the format of the fallback image is bitmap (BMP), enhanced metafile format (EMF), Graphics Interchange Format (GIF), Joint Photographic Experts Group (JPEG), Portable Network Graphics (PNG) or TIFF, that fallback image will be used as the image of the shape; otherwise, the unsupported part MUST be ignored and the containing shape is invisible. |

**ObjectType:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**ShowAsIcon:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**ObjectWidth:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**ObjectHeight:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**MappingMode:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**ExtentX:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**ExtentY:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**CompressionType:** An xsd:token ([XMLSCHEMA2] section 3.3.2) attribute that is unused and MUST be ignored.

**CompressionLevel:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ForeignData\_Type" mixed="true">
2. <xsd:sequence>
3. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1"/>
4. </xsd:sequence>
5. <xsd:attribute name="ForeignType" type="xsd:token" use="required"/>
6. <xsd:attribute name="ObjectType" type="xsd:unsignedInt"/>
7. <xsd:attribute name="ShowAsIcon" type="xsd:boolean"/>
8. <xsd:attribute name="ObjectWidth" type="xsd:double"/>
9. <xsd:attribute name="ObjectHeight" type="xsd:double"/>
10. <xsd:attribute name="MappingMode" type="xsd:unsignedShort"/>
11. <xsd:attribute name="ExtentX" type="xsd:double"/>
12. <xsd:attribute name="ExtentY" type="xsd:double"/>
13. <xsd:attribute name="CompressionType" type="xsd:token"/>
14. <xsd:attribute name="CompressionLevel" type="xsd:double"/>
15. </xsd:complexType>

##### FunctionDef\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Extensions\_Type](#Section_37185c5e64bd40b68679ed9a691a0486)

A complex type that specifies a [function](#Section_71b8cdb618854fa2a75016d6626054f4) that is not specified in this specification.

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the name of the function. It MUST be unique amongst all the FunctionDef\_Type, [CellDef\_Type](#Section_54c859c5a4004f699a66cffab531a6d3), and [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348) elements in the [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST NOT be equal to the name of a function token listed in the [Function Token Definitions](#Section_841b28f1ba4a46fb9034a9d51de6e0f9) section of this specification. It MUST NOT be equal to the name of a [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b) listed in the [Sections](#Section_ae0d39d7aa9a4a5d9c51ea0feb34e00f) section of this specification. It MUST NOT be equal to the name of a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) listed in the [Cells](#Section_c31ebb48e79243088bc0ebcba281ce20) section of this specification.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="FunctionDef\_Type">
2. <xsd:attribute name="N" type="xsd:string" use="required"/>
3. </xsd:complexType>

##### GlueSettings\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="GlueSettings\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:int"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### HeaderCenter\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="HeaderCenter\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### HeaderFooter\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that is unused and MUST be ignored.

*Child Elements:*

**HeaderMargin:** A [HeaderMargin\_Type](#Section_4bff912a3ba543ab80559e4222f55178) element that is unused and MUST be ignored.

**FooterMargin:** A [FooterMargin\_Type](#Section_53697b00eaee4a6a8790f5578ccf0b99) element that is unused and MUST be ignored.

**HeaderLeft:** A [HeaderLeft\_Type](#Section_733c8c3758ef46cfb0a20636476d6e8e) element that is unused and MUST be ignored.

**HeaderCenter:** A [HeaderCenter\_Type](#Section_d4bd9428b708475a8823adf6b7d48d3e) element that is unused and MUST be ignored.

**HeaderRight:** A [HeaderRight\_Type](#Section_102e20302daa4b8399a208817f47af78) element that is unused and MUST be ignored.

**FooterLeft:** A [FooterLeft\_Type](#Section_d64033c46c4a49afb0c706bdfbc1e85d) element that is unused and MUST be ignored.

**FooterCenter:** A [FooterCenter\_Type](#Section_5a3f432462ec40a99dcedf5fdad28a1e) element that is unused and MUST be ignored.

**FooterRight:** A [FooterRight\_Type](#Section_f84822373418441d841aff9670918f82) element that is unused and MUST be ignored.

**HeaderFooterFont:** A [HeaderFooterFont\_Type](#Section_e5be6d65182a44c4ad04db5ff0051ca2) element that is unused and MUST be ignored.

*Attributes:*

**HeaderFooterColor:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="HeaderFooter\_Type">
2. <xsd:all>
3. <xsd:element name="HeaderMargin" type="HeaderMargin\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="FooterMargin" type="FooterMargin\_Type" minOccurs="0" maxOccurs="1"/>
5. <xsd:element name="HeaderLeft" type="HeaderLeft\_Type" minOccurs="0" maxOccurs="1"/>
6. <xsd:element name="HeaderCenter" type="HeaderCenter\_Type" minOccurs="0" maxOccurs="1"/>
7. <xsd:element name="HeaderRight" type="HeaderRight\_Type" minOccurs="0" maxOccurs="1"/>
8. <xsd:element name="FooterLeft" type="FooterLeft\_Type" minOccurs="0" maxOccurs="1"/>
9. <xsd:element name="FooterCenter" type="FooterCenter\_Type" minOccurs="0" maxOccurs="1"/>
10. <xsd:element name="FooterRight" type="FooterRight\_Type" minOccurs="0" maxOccurs="1"/>
11. <xsd:element name="HeaderFooterFont" type="HeaderFooterFont\_Type" minOccurs="0" maxOccurs="1"/>
12. </xsd:all>
13. <xsd:attribute name="HeaderFooterColor" type="xsd:string"/>
14. </xsd:complexType>

##### HeaderFooterFont\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

*Attributes:*

**Height:** An xsd:int ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.17) attribute that is unused and MUST be ignored.

**Width:** An xsd:int ([XMLSCHEMA2] section 3.3.17) attribute that is unused and MUST be ignored.

**Escapement:** An xsd:int ([XMLSCHEMA2] section 3.3.17) attribute that is unused and MUST be ignored.

**Orientation:** An xsd:int ([XMLSCHEMA2] section 3.3.17) attribute that is unused and MUST be ignored.

**Weight:** An xsd:int ([XMLSCHEMA2] section 3.3.17) attribute that is unused and MUST be ignored.

**Italic:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**Underline:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**StrikeOut:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**CharSet:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**OutPrecision:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**ClipPrecision:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**Quality:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**PitchAndFamily:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

**FaceName:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="HeaderFooterFont\_Type">
2. <xsd:attribute name="Height" type="xsd:int"/>
3. <xsd:attribute name="Width" type="xsd:int"/>
4. <xsd:attribute name="Escapement" type="xsd:int"/>
5. <xsd:attribute name="Orientation" type="xsd:int"/>
6. <xsd:attribute name="Weight" type="xsd:int"/>
7. <xsd:attribute name="Italic" type="xsd:unsignedByte"/>
8. <xsd:attribute name="Underline" type="xsd:unsignedByte"/>
9. <xsd:attribute name="StrikeOut" type="xsd:unsignedByte"/>
10. <xsd:attribute name="CharSet" type="xsd:unsignedByte"/>
11. <xsd:attribute name="OutPrecision" type="xsd:unsignedByte"/>
12. <xsd:attribute name="ClipPrecision" type="xsd:unsignedByte"/>
13. <xsd:attribute name="Quality" type="xsd:unsignedByte"/>
14. <xsd:attribute name="PitchAndFamily" type="xsd:unsignedByte"/>
15. <xsd:attribute name="FaceName" type="xsd:string"/>
16. </xsd:complexType>

##### HeaderLeft\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="HeaderLeft\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### HeaderMargin\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

*Attributes:*

**Unit:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="HeaderMargin\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:double">
4. <xsd:attribute name="Unit" type="xsd:string"/>
5. </xsd:extension>
6. </xsd:simpleContent>
7. </xsd:complexType>

##### HeaderRight\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="HeaderRight\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:string"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### Icon\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109), [MasterShortcut\_Type](#Section_6ee6349c2e874cf691c7609f1880ad2e)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Icon\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:base64Binary"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### Master\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122)

A complex type that specifies a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**PageSheet:** A [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element that specifies the properties of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) associated with the master.

**Rel:** A [Rel\_Type](#Section_34f54be6adb24aa8a6837d1db7a25d46) element that specifies a [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) to the corresponding [Master XML Part](#Section_10b28d2fd32d4b8c96f5dad13d32dd11).

**Icon:** An [Icon\_Type](#Section_bf37d2013f434ccbb0dcfe14e45a7f90) element that is unused and MUST be ignored.

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the unique one-based index of the master. It MUST be equal to or greater than one. It MUST be unique amongst all the Master\_Type and [MasterShortcut\_Type](#Section_6ee6349c2e874cf691c7609f1880ad2e) child elements of the containing Masters\_Type.

**BaseID:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies a [**GUID**](#gt_f49694cc-c350-462d-ab8e-816f0103c6c1) which identifies the master across web drawings.

**UniqueID:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies a GUID which identifies the master within a web drawing. It MUST be different than any other **UniqueID** attribute of a Master\_Type in the same web drawing.

**MatchByName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-dependent name of the master.

**NameU:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-independent name of a master.

**IsCustomName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused an MUST be ignored.

**IsCustomNameU:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused an MUST be ignored.

**IconSize:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**PatternFlags:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that specifies whether and how a master behaves as a [custom pattern](#Section_edeaf22cf25a4df3b07c0bdac1fd8303). If present, it MUST be equal to a value from the following table.

| Value | Description |
| --- | --- |
| 1 | Specifies a line pattern where multiple copies of the pattern are bent to follow the line. |
| 2 | Specifies a line end pattern where the line end is positioned in the direction of the line. |
| 65 | Specifies a line pattern where multiple copies of the pattern are bent to follow the line and the pattern is scaled based on the [scale](#Section_1a60ffcb969c48f1aa02ff2228718043) of the drawing page. |
| 1026 | Specifies a line end pattern where the line end is in the direction of the line and the pattern is scaled based on the scale of the drawing page. |
| 4100 | Specifies a fill pattern where a single copy of the pattern is placed at the center of the [shape](#Section_2995871af1b144e69754989fb760ee18). |
| 20484 | Specifies a fill pattern where a single copy of the pattern is placed at the center of the shape and the pattern is scaled based on the scale of the drawing page. |
| Any other value | Specifies that the master does not behave as a custom pattern. |

**Prompt:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**Hidden:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IconUpdate:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute is unused and that MUST be ignored.

**AlignName:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**MasterType:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Master\_Type">
2. <xsd:all>
3. <xsd:element name="PageSheet" type="PageSheet\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1"/>
5. <xsd:element name="Icon" type="Icon\_Type" minOccurs="0" maxOccurs="1"/>
6. </xsd:all>
7. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
8. <xsd:attribute name="BaseID" type="xsd:string"/>
9. <xsd:attribute name="UniqueID" type="xsd:string"/>
10. <xsd:attribute name="MatchByName" type="xsd:boolean"/>
11. <xsd:attribute name="Name" type="xsd:string"/>
12. <xsd:attribute name="NameU" type="xsd:string"/>
13. <xsd:attribute name="IsCustomName" type="xsd:boolean"/>
14. <xsd:attribute name="IsCustomNameU" type="xsd:boolean"/>
15. <xsd:attribute name="IconSize" type="xsd:unsignedShort"/>
16. <xsd:attribute name="PatternFlags" type="xsd:unsignedShort"/>
17. <xsd:attribute name="Prompt" type="xsd:string"/>
18. <xsd:attribute name="Hidden" type="xsd:boolean"/>
19. <xsd:attribute name="IconUpdate" type="xsd:boolean"/>
20. <xsd:attribute name="AlignName" type="xsd:unsignedShort"/>
21. <xsd:attribute name="MasterType" type="xsd:unsignedShort"/>
22. </xsd:complexType>

##### Masters\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Masters](#Section_7e9c19c3d88148288a472036ee94f378)

A complex type that specifies a collection of [master](#Section_04e031963af24a52bd32ef5d79b9efc5)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**Master:** A [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element that specifies a master.

**MasterShortcut:** A [MasterShortcut\_Type](#Section_6ee6349c2e874cf691c7609f1880ad2e) element that specifies an unused master format.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Masters\_Type">
2. <xsd:sequence>
3. <xsd:element name="Master" type="Master\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="MasterShortcut" type="MasterShortcut\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. </xsd:sequence>
6. </xsd:complexType>

##### MasterShortcut\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122)

A complex type that specifies an unused [master](#Section_04e031963af24a52bd32ef5d79b9efc5) format.

*Child Elements:*

**Icon:** An [Icon\_Type](#Section_bf37d2013f434ccbb0dcfe14e45a7f90) element that is unused and MUST be ignored.

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the unique one-based index of the master. It MUST be equal to or greater than one. It MUST be unique amongst all the Master\_Type and MasterShortcut\_Type child elements of the containing Masters\_Type.

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**NameU:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**IsCustomName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IsCustomNameU:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IconSize:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**PatternFlags:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**Prompt:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**ShortcutURL:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**ShortcutHelp:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**AlignName:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**MasterType:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that specifies that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="MasterShortcut\_Type">
2. <xsd:all>
3. <xsd:element name="Icon" type="Icon\_Type" minOccurs="0" maxOccurs="1"/>
4. </xsd:all>
5. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
6. <xsd:attribute name="Name" type="xsd:string"/>
7. <xsd:attribute name="NameU" type="xsd:string"/>
8. <xsd:attribute name="IsCustomName" type="xsd:boolean"/>
9. <xsd:attribute name="IsCustomNameU" type="xsd:boolean"/>
10. <xsd:attribute name="IconSize" type="xsd:unsignedShort"/>
11. <xsd:attribute name="PatternFlags" type="xsd:unsignedShort"/>
12. <xsd:attribute name="Prompt" type="xsd:string"/>
13. <xsd:attribute name="ShortcutURL" type="xsd:string"/>
14. <xsd:attribute name="ShortcutHelp" type="xsd:string"/>
15. <xsd:attribute name="AlignName" type="xsd:unsignedShort"/>
16. <xsd:attribute name="MasterType" type="xsd:unsignedShort"/>
17. </xsd:complexType>

##### Page\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Pages\_Type](#Section_cc5285664612436aa8e614d376f5d8a6)

A complex type that specifies a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

*Child Elements:*

**PageSheet:** A [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element that specifies the properties of a drawing page. There MUST be exactly one occurrence of this child element.

**Rel:** A [Rel\_Type](#Section_34f54be6adb24aa8a6837d1db7a25d46) element that specifies a [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) to the corresponding [Page XML part](#Section_1f15c8f06565465caefd2be6af545e8a).

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the unique one-based index of the drawing page. It MUST be unique amongst all the Page Type child elements of the containing [Pages Type](#Section_2a7bb354101c40a49b7ba596af34e43c).

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-dependent name of a drawing page.

**NameU:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-independent name of a drawing page.

**IsCustomName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IsCustomNameU:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**Background:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies whether the current page can be used as a background. It MUST be equal to zero or one.

**BackPage:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the background page of the current drawing page. It MUST be equal to the **ID** attribute of a Page\_Type element that has a **Background** attribute value of **TRUE**.

**ViewScale:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**ViewCenterX:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**ViewCenterY:** An xsd:double ([XMLSCHEMA2] section 3.2.5) attribute that is unused and MUST be ignored.

**ReviewerID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies that the PageSheet values and any associated [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803) are unused and MUST be ignored.

**AssociatedPage:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Page\_Type">
2. <xsd:all>
3. <xsd:element name="PageSheet" type="PageSheet\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1"/>
5. </xsd:all>
6. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
7. <xsd:attribute name="Name" type="xsd:string"/>
8. <xsd:attribute name="NameU" type="xsd:string"/>
9. <xsd:attribute name="IsCustomName" type="xsd:boolean"/>
10. <xsd:attribute name="IsCustomNameU" type="xsd:boolean"/>
11. <xsd:attribute name="Background" type="xsd:boolean"/>
12. <xsd:attribute name="BackPage" type="xsd:unsignedInt"/>
13. <xsd:attribute name="ViewScale" type="xsd:double"/>
14. <xsd:attribute name="ViewCenterX" type="xsd:double"/>
15. <xsd:attribute name="ViewCenterY" type="xsd:double"/>
16. <xsd:attribute name="ReviewerID" type="xsd:unsignedInt"/>
17. <xsd:attribute name="AssociatedPage" type="xsd:unsignedInt"/>
18. </xsd:complexType>

##### PageContents\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [MasterContents](#Section_b6cf2e631db442a3a0fe835a53cd04b2), [PageContents](#Section_2a3ecbeeea9c4cf086ff906e2a238803)

A complex type that specifies the information about the shapes in a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) or [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**Shapes:** A [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd) element that specifies a collection of [shapes](#Section_2995871af1b144e69754989fb760ee18) contained in a master or drawing page.

**Connects:** A [Connects\_Type](#Section_35e2268d327c45749fbfb5e36a9c1bdd) element that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="PageContents\_Type">
2. <xsd:sequence>
3. <xsd:element name="Shapes" type="Shapes\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="Connects" type="Connects\_Type" minOccurs="0" maxOccurs="1"/>
5. </xsd:sequence>
6. </xsd:complexType>

##### Pages\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Pages](#Section_2a7bb354101c40a49b7ba596af34e43c)

A complex type that specifies a collection of [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

*Child Elements:*

**Page:** A [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element that specifies a drawing page in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Pages\_Type">
2. <xsd:sequence>
3. <xsd:element name="Page" type="Page\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### PageSheet\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109), [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2)

A complex type that specifies the properties of a [page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

**Section:** A [Section\_Type](#Section_735b599d1359476785931c508a885779) element that specifies a collection of related properties.

*Attributes:*

**UniqueID:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that is unused and MUST be ignored.

**LineStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) from which to [inherit](#Section_59214758549c4f99a4dede2bf5fb08d3) line formatting. It MUST be the value of the **ID** attribute associated with a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) in the web drawing.

**FillStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit fill formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

**TextStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit text formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="PageSheet\_Type">
2. <xsd:complexContent>
3. <xsd:extension base="Sheet\_Type">
4. <xsd:attribute name="UniqueID" type="xsd:string"/>
5. </xsd:extension>
6. </xsd:complexContent>
7. </xsd:complexType>

##### pp\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836)

A complex type that specifies the beginning of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) and an index designating the set of [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab) to use.

*Attributes:*

**IX:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the paragraph properties used in the text run. It MUST be the **IX** attribute of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="pp\_Type">
2. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required"/>
3. </xsd:complexType>

##### PrimaryKey\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea)

A complex type that specifies a component of the [**primary key**](#gt_e4d8c530-39c1-4fc6-8ccc-8d51a221158d) of a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c).

*Child Elements:*

**RowKeyValue:** A [RowKeyValue\_Type](#Section_5766daba76894500a6a149e825672277) element that specifies the value of this component of the primary key for an individual [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of a recordset. There MUST be at least one occurrence of this child element.

*Attributes:*

**ColumnNameID:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the name of a [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) that is a component of the primary key. It MUST be the value of the **ColumnNameID** attribute of a [DataColumn\_Type](#Section_97e06397990447619be3884e39045969) descendant element of the DataRecordSet\_Type whose primary key is being specified.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="PrimaryKey\_Type">
2. <xsd:sequence>
3. <xsd:element name="RowKeyValue" type="RowKeyValue\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="ColumnNameID" type="xsd:string" use="required"/>
6. </xsd:complexType>

##### ProtectBkgnds\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ProtectBkgnds\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:boolean"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### ProtectMasters\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ProtectMasters\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:boolean"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### ProtectShapes\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that specifies whether a [shape](#Section_2995871af1b144e69754989fb760ee18) can be [selectable](#Section_0a5a7ac088504e078c3cfeb4db36dcc7). If this value is one and the value of the [LockSelect](#Section_270a5a34893b40949126dc355aca4b46) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element of the shape is one, the shape is not selectable; otherwise the shape can be selectable.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ProtectShapes\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:boolean"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### ProtectStyles\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ProtectStyles\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:boolean"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### PublishedPage\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [PublishSettings\_Type](#Section_5351e0e3dbdd45e8a0bacc4c7482ac94)

A complex type that specifies that a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) is viewable in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of a drawing page. It MUST be the value of the **ID** attribute of the [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element that corresponds to a drawing page in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="PublishedPage\_Type">
2. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
3. </xsd:complexType>

##### PublishSettings\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that specifies the set of [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b) that are viewable and set of [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) that can be [refreshed](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**PublishedPage:** A [PublishedPage\_Type](#Section_f19d7de035d846aa93622b62852e0c09) element that specifies that a drawing page is viewable in the web drawing.

**RefreshableData:** A [RefreshableData\_Type](#Section_7146b5f9e41248b78db8caa3afb13746) element that specifies that a recordset can be refreshed in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="PublishSettings\_Type">
2. <xsd:sequence>
3. <xsd:element name="PublishedPage" type="PublishedPage\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="RefreshableData" type="RefreshableData\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. </xsd:sequence>
6. </xsd:complexType>

##### RefBy\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166), [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a)

A complex type that specifies a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

*Attributes:*

**T:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the type of the reference. The value MUST be equal to "Page".

**ID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the **ID** attribute of a [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="RefBy\_Type">
2. <xsd:attribute name="T" type="xsd:string" use="required"/>
3. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
4. </xsd:complexType>

##### RefreshableData\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [PublishSettings\_Type](#Section_5351e0e3dbdd45e8a0bacc4c7482ac94)

A complex type that specifies that a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) is [refreshable](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of a recordset. It MUST be the value of the **ID** attribute of the [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element that corresponds to a recordset in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="RefreshableData\_Type">
2. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
3. </xsd:complexType>

##### RefreshConflict\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea)

A complex type that is unused and MUST be ignored.

*Attributes:*

**RowID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that is unused and MUST be ignored.

**ShapeID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**PageID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="RefreshConflict\_Type">
2. <xsd:attribute name="RowID" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="ShapeID" type="xsd:unsignedInt" use="required"/>
4. <xsd:attribute name="PageID" type="xsd:unsignedInt" use="required"/>
5. </xsd:complexType>

##### Rel\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [ForeignData\_Type](#Section_c5a5df0c02e64e729042d5766f614cf5), [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109), [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2), [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea)

A complex type that specifies a [relationship](#Section_df1591d7f2814f2da496f29f14f4c0e4) to a [part](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) as specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 8.3.

If the parent element is a DataRecordSet\_Type element, this element is unused and MUST be ignored.

*Attributes:*

**r:id:** A **ST\_RelationshipId** as specified in [ISO/IEC29500-1:2016] section 22.8.2.1) attribute that specifies a relationship to a part. The namespace of the attribute is http://schemas.openxmlformats.org/officeDocument/2006/relationships.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Rel\_Type">
2. <xsd:attribute ref="r:id" use="required"/>
3. </xsd:complexType>

##### Row\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Section\_Type](#Section_735b599d1359476785931c508a885779)

A complex type that specifies a collection of related properties.

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [row](#Section_d74a66b474714467b154ea4f60de7fdd).

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of a collection of properties. If the **N** attribute of the containing Section\_Type element is equal to "User", "Property", "Actions", "Control", "Hyperlink", or "ActionTag", or if the containing Section\_Type element is specified by a [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348) with a **T** attribute equal to "Named", the contained Row\_Type element MUST specify an **N** attribute. If a Row\_Type element specifies an **N** attribute, then it MUST NOT specify an **IX** attribute. This attribute MUST be unique amongst all of the Row\_Type elements of the containing Section\_Type element.

**LocalName:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-dependent name of a collection of properties. It MUST be unique amongst all of the Row\_Type elements of the containing Section\_Type element.

**IX:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the one-based identifier of a collection of properties. If the **N** attribute of the containing Section\_Type element is equal to "Character", "Field", "FillGradient", "Geometry", "Layer", "LineGradient", "Paragraph", "Reviewer", "Scratch", or "Tabs", or if the containing Section\_Type element is specified by a SectionDef\_Type with a **T** attribute equal to "Indexed", the contained Row\_Type element MUST specify an **IX** attribute or the index of the contained Row\_Type element MUST be calculated implicitly by counting the number of preceding Row\_Type elements with the same **N** attribute in the containing Section\_Type element. If a Row\_Type element specifies an **IX** attribute, then it MUST NOT specify an **N** attribute. The **IX** attribute of a Row\_Type element MUST be unique amongst all of the Row\_Type elements of the containing Section\_Type element. It MUST be greater than the **IX** attribute of any preceding Row\_Type element of the containing Section\_Type.

**T:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the type of the geometric path represented by a collection of properties and used in [geometry visualization](#Section_b690bcd44466465b938fc0cf7019eb39). It MUST be equal to a value as specified in [GeometryRowTypes](#Section_1aa5e5becf37441abeef5f228cb9f9a3). It is unused and MUST be ignored unless the Row\_Type element has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) Section\_Type parent element.

**Del:** A xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies whether a collection that would otherwise be [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) has been deleted. It MUST be equal to zero or one. A value of one specifies that a collection has been deleted and that the values of the properties in the collection are not inherited. A value of zero specifies that a collection of properties is valid for the shape. If the **Del** attribute is not present, the value is zero.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Row\_Type">
2. <xsd:sequence>
3. <xsd:element name="Cell" type="Cell\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="Trigger" type="Trigger\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. </xsd:sequence>
6. <xsd:attribute name="N" type="xsd:string"/>
7. <xsd:attribute name="LocalName" type="xsd:string"/>
8. <xsd:attribute name="IX" type="xsd:unsignedInt"/>
9. <xsd:attribute name="T" type="xsd:string"/>
10. <xsd:attribute name="Del" type="xsd:boolean"/>
11. </xsd:complexType>

##### RowDef\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348)

A complex type that specifies the definition of a [row](#Section_d74a66b474714467b154ea4f60de7fdd) that is not specified in this specification.

*Child Elements:*

**CellDef:** A [CellDef\_Type](#Section_54c859c5a4004f699a66cffab531a6d3) element that specifies the definition of a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) that is not specified in this specification.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="RowDef\_Type">
2. <xsd:sequence>
3. <xsd:element name="CellDef" type="CellDef\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### RowKeyValue\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [PrimaryKey\_Type](#Section_a503e916c0d240429d30e7dc4d6cfb65)

A complex type that specifies the value of a component of the [**primary key**](#gt_e4d8c530-39c1-4fc6-8ccc-8d51a221158d) for an individual [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c).

*Attributes:*

**RowID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of a row of a recordset. It MUST be equal to the **RowID** attribute of a [RowMap\_Type](#Section_ffc00766ecc44e5cb5eeedda9bc0f58e) child element of the [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea) element that contains this RowKeyValue\_Type element. It MUST be unique amongst all the RowKeyValue\_Type child elements of the containing PrimaryKey\_Type.

**Value:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the value of the [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) specified by the containing PrimaryKey\_Type for the row specified by the **RowID** attribute.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="RowKeyValue\_Type">
2. <xsd:attribute name="RowID" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="Value" type="xsd:string" use="required"/>
4. </xsd:complexType>

##### RowMap\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DataRecordSet\_Type](#Section_d7fcd200ebfe4c378b2c62fe8b6ba6ea)

A complex type that specifies the [data binding](#Section_9ab2ddda33b5434d9256bd769e300cd1) between a [**row**](#gt_a87817fc-9b18-49a1-925e-9be9e1d92665) of a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c) and a [shape](#Section_2995871af1b144e69754989fb760ee18).

*Attributes:*

**RowID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of a row of the recordset. It MUST be unique amongst all the RowMap\_Type child elements of the containing DataRecordSet\_Type.

**PageID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) that contains the shape. It MUST be equal to the **ID** attribute of the [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element associated with the drawing page.

**ShapeID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the shape. It MUST be equal to the **ID** attribute of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element associated with the shape.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="RowMap\_Type">
2. <xsd:attribute name="RowID" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="PageID" type="xsd:unsignedInt" use="required"/>
4. <xsd:attribute name="ShapeID" type="xsd:unsignedInt" use="required"/>
5. </xsd:complexType>

##### Section\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), [Sheet\_Type](#Section_8187d7a229874248810eb304b36a9669), [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that specifies a collection of related properties.

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b).

**Row:** A [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a collection of Cell\_Type elements.

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of a collection of properties. It MUST be unique amongst all of the Section\_Type elements of the containing Sheet\_Type element unless it is equal to "Geometry". It MUST be equal to a value as specified in [Sections](#Section_ae0d39d7aa9a4a5d9c51ea0feb34e00f).

**Del:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies whether a collection that would otherwise be [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) has been deleted. It MUST be equal to zero or one. A value of one specifies that a collection has been deleted and that the values of the properties in the collection are not inherited. A value of zero specifies that a collection of properties is valid for the shape. If the **Del** attribute is not present, the value is zero.

**IX:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the [**zero-based index**](#gt_bc60c405-d92b-4a8c-b63b-e404b1cc4dc4) of the element. It MUST be unique amongst all of the Section\_Type elements with the same **N** attribute of the containing Sheet\_Type. It MUST be greater than the **IX** attribute of any preceding Section\_Type element with the same **N** attribute of the containing Sheet\_Type.

When the **IX** attribute is not present, the index of the element is calculated implicitly by counting the number of preceding Section\_Type elements with the same **N** attribute in the containing Sheet\_Type.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Section\_Type">
2. <xsd:sequence>
3. <xsd:element name="Cell" type="Cell\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="Trigger" type="Trigger\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. <xsd:element name="Row" type="Row\_Type" minOccurs="0" maxOccurs="unbounded"/>
6. </xsd:sequence>
7. <xsd:attribute name="N" type="xsd:string" use="required"/>
8. <xsd:attribute name="Del" type="xsd:boolean"/>
9. <xsd:attribute name="IX" type="xsd:unsignedInt"/>
10. </xsd:complexType>

##### SectionDef\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Extensions\_Type](#Section_37185c5e64bd40b68679ed9a691a0486)

A complex type that specifies the definition of a [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b) that is not specified in this specification.

*Child Elements:*

**CellDef:** A [CellDef\_Type](#Section_54c859c5a4004f699a66cffab531a6d3) element that specifies the definition of a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) that is not specified in this specification.

**RowDef:** A [RowDef\_Type](#Section_0faaad04825a462da95588741883745c) element that specifies the definition of a [row](#Section_d74a66b474714467b154ea4f60de7fdd) that is not specified in this specification.

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of a collection of properties. It MUST be unique amongst all the [FunctionDef\_Type](#Section_a535a1b0612d43afb5c76aaa0d00d794), CellDef\_Type, and SectionDef\_Type elements in the [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST NOT be equal to the name of a [function token](#Section_71b8cdb618854fa2a75016d6626054f4) listed in the [Function Token Definitions](#Section_841b28f1ba4a46fb9034a9d51de6e0f9) section of this specification. It MUST NOT be equal to the name of a section listed in the [Sections](#Section_ae0d39d7aa9a4a5d9c51ea0feb34e00f) section of this specification. It MUST NOT be equal to the name of a cell listed in the [Cells](#Section_c31ebb48e79243088bc0ebcba281ce20) section of this specification.

**T:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the type of rows contained by the SectionDef\_Type element. It MUST be equal to a value from following table.

| Value | Description |
| --- | --- |
| Indexed | Specifies the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) elements in the SectionDef\_Type element MUST have an **IX** attribute and no **N** attribute. |
| Named | Specifies the Row\_Type elements in the SectionDef\_Type element MUST have an **N** attribute and no **IX** attribute. |

**S:** An xsd:unsignedByte ([XMLSCHEMA2] section 3.3.24) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="SectionDef\_Type">
2. <xsd:sequence>
3. <xsd:element name="CellDef" type="CellDef\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="RowDef" type="RowDef\_Type" minOccurs="0" maxOccurs="1"/>
5. </xsd:sequence>
6. <xsd:attribute name="N" type="xsd:string" use="required"/>
7. <xsd:attribute name="T" type="xsd:string"/>
8. <xsd:attribute name="S" type="xsd:unsignedByte"/>
9. </xsd:complexType>

##### Shapes\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageContents\_Type](#Section_5f4ff60ec150429e83a95f7523074e2d)

A complex type that specifies a collection of [shapes](#Section_2995871af1b144e69754989fb760ee18).

*Child Elements:*

**Shape:** A ShapeSheet\_Type element that specifies a shape in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Shapes\_Type">
2. <xsd:sequence>
3. <xsd:element name="Shape" type="ShapeSheet\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### ShapeSheet\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Shapes\_Type](#Section_4f0a282344fc487da588f234df1147bd)

A complex type that specifies a collection of properties associated with a [shape](#Section_2995871af1b144e69754989fb760ee18).

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

**Section:** A [Section\_Type](#Section_735b599d1359476785931c508a885779) element that specifies a collection of related properties.

**Text:** A [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836) element that specifies the text of a shape. It is unused and MUST be ignored when contained in a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), or [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120).

**Data1:** A [Data\_Type](#Section_cdb78bb760364678b095b63f3bb16cbf) element that is unused and MUST be ignored.

**Data2:** A Data\_Type element that is unused and MUST be ignored.

**Data3:** A Data\_Type element that is unused and MUST be ignored.

**ForeignData:** A [ForeignData\_Type](#Section_c5a5df0c02e64e729042d5766f614cf5) element that specifies picture data, such as a [**metafile**](#gt_ae5f028e-7e28-4a0b-bec6-2c87913f7db7), [**bitmap (BMP)**](#gt_15997d30-1146-484b-bedb-1453466718de), or [fallback image](#Section_df1d23b86a304991bfeb062f265ab5a1). It is unused and MUST be ignored when the **Type** attribute does not equal "Foreign".

**Shapes:** A Shapes\_Type element that specifies a collection of [subshapes](#Section_00285724289547c19f2f489ec5da125c) of the shape.

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the unique one-based index of the shape. It MUST be greater than or equal to 4. It MUST be unique amongst all the ShapeSheet\_Type child elements of the containing Shapes\_Type.

**OriginalID:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that is unused and MUST be ignored.

**Del:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that specifies whether a shape which is an instance of a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) is deleted locally. It MUST be equal to zero or one.

**MasterShape:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies a relationship between a subshape on a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) and a subshape of a [master shape](#Section_f04b271b5aec48d1b156b632d0172fe0). It MUST be equal to the **ID** attribute of a ShapeSheet\_Type element of a master shape. If the **Master** attribute is present, **MasterShape** is unused and MUST be ignored.

**UniqueID:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-dependent name of a shape.

**NameU:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-independent name of a shape.

**IsCustomName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IsCustomNameU:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**Master:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the master of the shape. It MUST be equal to the **ID** attribute of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element.

**Type:** An xsd:token ([XMLSCHEMA2] section 3.3.2) attribute that specifies the type of the shape. It MUST be equal to a value from the following table.

| Value | Description |
| --- | --- |
| Group | This MUST be the value of the attribute if the shape specified by this element has subshapes. |
| Guide | Specifies that the shape is not shown. |
| Foreign | Specifies that the data specified in this element’s **ForeignData** element is shown. |
| Shape | Specifies that the shape does not meet any of the previous conditions. |

**LineStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) from which to [inherit](#Section_59214758549c4f99a4dede2bf5fb08d3) line formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**FillStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit fill formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

**TextStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit text formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="ShapeSheet\_Type">
2. <xsd:complexContent>
3. <xsd:extension base="Sheet\_Type">
4. <xsd:sequence>
5. <xsd:element name="Text" type="Text\_Type" minOccurs="0" maxOccurs="1"/>
6. <xsd:element name="Data1" type="Data\_Type" minOccurs="0" maxOccurs="1"/>
7. <xsd:element name="Data2" type="Data\_Type" minOccurs="0" maxOccurs="1"/>
8. <xsd:element name="Data3" type="Data\_Type" minOccurs="0" maxOccurs="1"/>
9. <xsd:element name="ForeignData" type="ForeignData\_Type" minOccurs="0" maxOccurs="1"/>
10. <xsd:element name="Shapes" type="Shapes\_Type" minOccurs="0" maxOccurs="1"/>
11. </xsd:sequence>
12. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
13. <xsd:attribute name="OriginalID" type="xsd:unsignedInt"/>
14. <xsd:attribute name="Del" type="xsd:boolean"/>
15. <xsd:attribute name="MasterShape" type="xsd:unsignedInt"/>
16. <xsd:attribute name="UniqueID" type="xsd:string"/>
17. <xsd:attribute name="Name" type="xsd:string"/>
18. <xsd:attribute name="NameU" type="xsd:string"/>
19. <xsd:attribute name="IsCustomName" type="xsd:boolean"/>
20. <xsd:attribute name="IsCustomNameU" type="xsd:boolean"/>
21. <xsd:attribute name="Master" type="xsd:unsignedInt"/>
22. <xsd:attribute name="Type" type="xsd:token"/>
23. </xsd:extension>
24. </xsd:complexContent>
25. </xsd:complexType>

##### Sheet\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that specifies a collection of properties associated with a style, [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), or [shape](#Section_2995871af1b144e69754989fb760ee18).

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

**Section:** A [Section\_Type](#Section_735b599d1359476785931c508a885779) element that specifies a collection of related properties.

*Attributes:*

**LineStyle:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the identifier of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) from which to [inherit](#Section_59214758549c4f99a4dede2bf5fb08d3) line formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

**FillStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit fill formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

**TextStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit text formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Sheet\_Type" abstract="true">
2. <xsd:sequence minOccurs="0" maxOccurs="unbounded">
3. <xsd:element name="Cell" type="Cell\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="Trigger" type="Trigger\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. <xsd:element name="Section" type="Section\_Type" minOccurs="0" maxOccurs="unbounded"/>
6. <xsd:any minOccurs="0" maxOccurs="unbounded" namespace="##other" processContents="lax"/>
7. </xsd:sequence>
8. <xsd:attribute name="LineStyle" type="xsd:unsignedInt"/>
9. <xsd:attribute name="FillStyle" type="xsd:unsignedInt"/>
10. <xsd:attribute name="TextStyle" type="xsd:unsignedInt"/>
11. <xsd:anyAttribute namespace="##other" processContents="lax"/>
12. </xsd:complexType>

##### SnapAngle\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [SnapAngles\_Type](#Section_70d9234a0f314daba00dadc017926a5f)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="SnapAngle\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:double"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### SnapAngles\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

*Child Elements:*

**SnapAngle:** A [SnapAngle\_Type](#Section_e0a5cb55fde7414690e38c3e3742fe6b) element that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="SnapAngles\_Type">
2. <xsd:sequence>
3. <xsd:element name="SnapAngle" type="SnapAngle\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### SnapExtensions\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="SnapExtensions\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:int"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### SnapSettings\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368)

A complex type that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="SnapSettings\_Type">
2. <xsd:simpleContent>
3. <xsd:extension base="xsd:int"/>
4. </xsd:simpleContent>
5. </xsd:complexType>

##### StyleSheet\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f)

A complex type that specifies a [style sheet](#Section_b01703e4a485477d9128e93a52880888).

*Child Elements:*

**Cell:** A [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that specifies a single property.

**Trigger:** A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) associated with the [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

**Section:** A [Section\_Type](#Section_735b599d1359476785931c508a885779) element that specifies a collection of related properties.

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the index of the style sheet. It MUST be unique amongst all the StyleSheet\_Type child elements of the containing StyleSheets\_Type.

**Name:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-dependent name of a style sheet.

**NameU:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that specifies the language-independent name of a style sheet.

**IsCustomName:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**IsCustomNameU:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**LineStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to [inherit](#Section_59214758549c4f99a4dede2bf5fb08d3) line formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**FillStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit fill formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

**TextStyle:** An xsd:unsignedInt ([XMLSCHEMA2] section 3.3.22) attribute that specifies the identifier of the style sheet from which to inherit text formatting. It MUST be the value of the **ID** attribute associated with a StyleSheet\_Type in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="StyleSheet\_Type">
2. <xsd:complexContent>
3. <xsd:extension base="Sheet\_Type">
4. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
5. <xsd:attribute name="Name" type="xsd:string"/>
6. <xsd:attribute name="NameU" type="xsd:string"/>
7. <xsd:attribute name="IsCustomName" type="xsd:boolean"/>
8. <xsd:attribute name="IsCustomNameU" type="xsd:boolean"/>
9. </xsd:extension>
10. </xsd:complexContent>
11. </xsd:complexType>

##### StyleSheets\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that specifies a collection of [style sheets](#Section_b01703e4a485477d9128e93a52880888) in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**StyleSheet:** A [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) element that specifies a style sheet.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="StyleSheets\_Type">
2. <xsd:sequence>
3. <xsd:element name="StyleSheet" type="StyleSheet\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### Text\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that specifies the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) and text properties of a [shape](#Section_2995871af1b144e69754989fb760ee18). The text is specified by the contents of this element and is separated into [**text runs**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) by its child elements.

*Child Elements:*

**cp:** A [cp\_Type](#Section_a8b6f1ba88f847eb8e5efb5045026efa) element that specifies the beginning of a text run and the set of [character properties](#Section_c5dd283696ad47959dc458db5ab84015) to use.

**pp:** A [pp\_Type](#Section_c5fb07ebdda243698f5264b47b6805e4) element that specifies the beginning of a text run and the set of [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab) to use.

**tp:** A [tp\_Type](#Section_166dcd016b8840448c35e21cb12e2066) element that specifies the beginning of a text run and the set of [tabs properties](#Section_7ae7864a00ec483d9391508c764ba856) to use.

**fld:** A [fld\_Type](#Section_fa12e060338c4c998d41571ed75eade8) element that specifies a [text field](#Section_511cd5d9640846e4b16b42d513a07558) in a text run.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Text\_Type" mixed="true">
2. <xsd:choice minOccurs="0" maxOccurs="unbounded">
3. <xsd:element name="cp" type="cp\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. <xsd:element name="pp" type="pp\_Type" minOccurs="0" maxOccurs="unbounded"/>
5. <xsd:element name="tp" type="tp\_Type" minOccurs="0" maxOccurs="unbounded"/>
6. <xsd:element name="fld" type="fld\_Type" minOccurs="0" maxOccurs="unbounded"/>
7. </xsd:choice>
8. </xsd:complexType>

##### tp\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [Text\_Type](#Section_3031da58e11e460b9df59cfb6bc0a836)

A complex type that specifies the beginning of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) and specifies an index designating the set of [tabs properties](#Section_7ae7864a00ec483d9391508c764ba856) to use.

*Attributes:*

**IX:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that specifies the tabs properties used in the text run. It MUST be the **IX** attribute of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [Tabs](#Section_1ebf938deeb2454486090feeb086cf2c) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="tp\_Type">
2. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required"/>
3. </xsd:complexType>

##### VisioDocument\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument](#Section_99b55522415b402aaec875b956562728)

A complex type that specifies properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Child Elements:*

**DocumentSettings:** A [DocumentSettings\_Type](#Section_70437923e6f14f71a820129134cdf368) element that is unused and MUST be ignored.

**Colors:** A [Colors\_Type](#Section_235d2b6231ad4aa99a2e9789a6a6de30) element that specifies the [color table](#Section_1fac45bfef104b29ada14acf47fed340) for the web drawing.

**FaceNames:** A [FaceNames\_Type](#Section_f6b0e8dcfa2648bd812a937da904b562) element that specifies the [font table](#Section_96277f8252314f46bd64e0e5a496df19) for the web drawing.

**StyleSheets:** A [StyleSheets\_Type](#Section_a525051f1f034313b92f1b89b1691b7f) element that specifies a collection of [style sheets](#Section_b01703e4a485477d9128e93a52880888) in the web drawing.

**DocumentSheet:** A [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) element that specifies properties of the web drawing.

**EventList:** An [EventList\_Type](#Section_8cd90beaa48944ed89400ac1e0ed431d) element that that is unused and MUST be ignored.

**HeaderFooter:** A [HeaderFooter\_Type](#Section_16ef319c5a3441db9df821645613542a) element that is unused and MUST be ignored.

**PublishSettings:** A [PublishSettings\_Type](#Section_5351e0e3dbdd45e8a0bacc4c7482ac94) element that specifies the set of [drawing pages](#Section_bb1af8e686064cd981b54cf0e8dedf1b) that are viewable and set of [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) that can be [refreshed](#Section_37ec2f4bfaa84e82aa6cd9f9b364ddea) in the web drawing. If this element is missing, all drawing pages are viewable and all recordsets can be refreshed in the web drawing.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="VisioDocument\_Type">
2. <xsd:sequence>
3. <xsd:element name="DocumentSettings" type="DocumentSettings\_Type" minOccurs="0" maxOccurs="1"/>
4. <xsd:element name="Colors" type="Colors\_Type" minOccurs="0" maxOccurs="1"/>
5. <xsd:element name="FaceNames" type="FaceNames\_Type" minOccurs="0" maxOccurs="1"/>
6. <xsd:element name="StyleSheets" type="StyleSheets\_Type" minOccurs="0" maxOccurs="1"/>
7. <xsd:element name="DocumentSheet" type="DocumentSheet\_Type" minOccurs="0" maxOccurs="1"/>
8. <xsd:element name="EventList" type="EventList\_Type" minOccurs="0" maxOccurs="1"/>
9. <xsd:element name="HeaderFooter" type="HeaderFooter\_Type" minOccurs="0" maxOccurs="1"/>
10. <xsd:element name="PublishSettings" type="PublishSettings\_Type" minOccurs="0" maxOccurs="1"/>
11. <xsd:any minOccurs="0" maxOccurs="unbounded" namespace="##other" processContents="lax"/>
12. </xsd:sequence>
13. <xsd:anyAttribute namespace="##other" processContents="lax"/>
14. </xsd:complexType>

##### EventList\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79)

A complex type that is unused and MUST be ignored.

*Child Elements:*

**EventItem:** An [EventItem\_Type](#Section_965099c1343743c49783d10586e5031b) element that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="EventList\_Type">
2. <xsd:sequence>
3. <xsd:element name="EventItem" type="EventItem\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. </xsd:complexType>

##### EventItem\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [EventList\_Type](#Section_8cd90beaa48944ed89400ac1e0ed431d)

A complex type that is unused and MUST be ignored.

*Attributes:*

**ID:** An xsd:unsignedInt ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.3.22) attribute that is unused and MUST be ignored.

**Action:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**EventCode:** An xsd:unsignedShort ([XMLSCHEMA2] section 3.3.23) attribute that is unused and MUST be ignored.

**Enabled:** An xsd:boolean ([XMLSCHEMA2] section 3.2.2) attribute that is unused and MUST be ignored.

**Target:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

**TargetArgs:** An xsd:string ([XMLSCHEMA2] section 3.2.1) attribute that is unused and MUST be ignored.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="EventItem\_Type">
2. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required"/>
3. <xsd:attribute name="Action" type="xsd:unsignedShort" use="required"/>
4. <xsd:attribute name="EventCode" type="xsd:unsignedShort" use="required"/>
5. <xsd:attribute name="Enabled" type="xsd:boolean"/>
6. <xsd:attribute name="Target" type="xsd:string" use="required"/>
7. <xsd:attribute name="TargetArgs" type="xsd:string" use="required"/>
8. </xsd:complexType>

##### Trigger\_Type

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

*Referenced by:* [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), [Section\_Type](#Section_735b599d1359476785931c508a885779), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), [Sheet\_Type](#Section_8187d7a229874248810eb304b36a9669), [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d)

A complex type that specifies the existence of an [update trigger](#Section_6da736d6393340dd86acdbb1220170cd).

*Child Elements:*

**RefBy:** A [RefBy\_Type](#Section_8eff050eaedc4969bf45d6e9b83b0d39) element that specifies a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

*Attributes:*

**N:** An xsd:string ([[XMLSCHEMA2]](https://go.microsoft.com/fwlink/?LinkId=90610) section 3.2.1) attribute that specifies the language-independent name of the property. It MUST be unique amongst all of the Trigger\_Type elements of the parent element, and MUST be equal to a value specified in the Triggers (section [2.4.5](#Section_120f9695e3d34c5ebfeedf318590a573)) section of this specification.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this complex type.

1. <xsd:complexType name="Trigger\_Type" mixed="true">
2. <xsd:sequence>
3. <xsd:element name="RefBy" type="RefBy\_Type" minOccurs="0" maxOccurs="unbounded"/>
4. </xsd:sequence>
5. <xsd:attribute name="N" type="xsd:string" use="required"/>
6. </xsd:complexType>

#### Elements

This section specifies the XML root elements contained in the [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

##### VisioDocument

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [VisioDocument\_Type](#Section_327dc3111aa4460eada69ac8c75e4c79) element that specifies properties of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="VisioDocument" type="VisioDocument\_Type"/>

##### Masters

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [Masters\_Type](#Section_59c63b9cbc394dc195ae79925c336122) element that specifies the [masters](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="Masters" type="Masters\_Type"/>

##### MasterContents

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [PageContents\_Type](#Section_5f4ff60ec150429e83a95f7523074e2d) element that specifies information about the [shapes](#Section_2995871af1b144e69754989fb760ee18) in a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="MasterContents" type="PageContents\_Type"/>

##### Pages

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [Pages\_Type](#Section_cc5285664612436aa8e614d376f5d8a6) element that specifies the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="Pages" type="Pages\_Type"/>

##### PageContents

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [PageContents\_Type](#Section_5f4ff60ec150429e83a95f7523074e2d) element that specifies information about the contents of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="PageContents" type="PageContents\_Type"/>

##### DataConnections

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [DataConnections\_Type](#Section_026a97c49edd4b3da00e342157fb3ebd) element that specifies the [data connection](#Section_0c83304b6f034218bfb1a49d51060e9c) information needed to query [**data sources**](#gt_e091613c-6901-4874-b9b2-27273ead1075) and [refresh](#Section_67d73a1ab5b148bf864c1d426a2df206) the [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) referenced by a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="DataConnections" type="DataConnections\_Type"/>

##### DataRecordSets

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [DataRecordSets\_Type](#Section_3d9558e7891447c590b1175162a40aa9) element that specifies the [recordsets](#Section_5c84498371344d01bcee8e705c2efd1c) and [data binding](#Section_9ab2ddda33b5434d9256bd769e300cd1)s in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="DataRecordSets" type="DataRecordSets\_Type"/>

##### Comments

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

A [Comments\_Type](#Section_e150a15c60c24ef98027a91d702f584a) element that specifies the properties of [comments](#Section_60086b03a61f4e25ac5b943c02a66d8e) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="Comments" type="Comments\_Type"/>

##### Theme

*Target namespace:* http://visThemeSchemaUri

A [CT\_OfficeStyleSheet](#Section_5c86236387dc41d490d0a892bf545fdf) element specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) **s**ection 20.1.6.9 that specifies the properties of a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="theme" type="CT\_OfficeStyleSheet"/>

##### Extensions

*Target namespace:* http://schemas.microsoft.com/office/visio/2011/1/core

An [Extensions\_Type](#Section_37185c5e64bd40b68679ed9a691a0486) element that specifies the definitions of [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b), [rows](#Section_d74a66b474714467b154ea4f60de7fdd), and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) not specified in the specification.

The following W3C XML Schema ([[XMLSCHEMA1]](https://go.microsoft.com/fwlink/?LinkId=90608) section 2.1) fragment specifies the contents of this element.

1. <xsd:element name="Extensions" type="Extensions\_Type"/>

#### Attributes

This specification does not define any attributes.

### Markup Compatibility Schema

*Target namespace:* http://schemas.openxmlformats.org/markupcompatibility/2006

The Markup Compatibility Schema section specifies the [markup compatibility](#Section_c36178eb1ca34ad8ba6ed5a90642d291) attributes and elements, specified in [[ISO/IEC29500-3:2015]](https://go.microsoft.com/fwlink/?linkid=861154) section 10, supported in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

#### Compatibility-Rule Attributes

Compatibility-rule attributes, specified in [[ISO/IEC29500-3:2015]](https://go.microsoft.com/fwlink/?linkid=861154) section 10.1, are XML attributes which express rules governing markup consumers’ behavior when encountering XML elements and attributes from non-understood namespaces.

The following compatibility-rule attributes are supported.

| Attribute Name | Specified in |
| --- | --- |
| Ignorable | [ISO/IEC29500-3:2015] section 10.1.1 |
| MustUnderstand | [ISO/IEC29500-3:2015] section 10.1.4 |

#### Alternate-Content Elements

Alternate-content elements, specified in [[ISO/IEC29500-3:2015]](https://go.microsoft.com/fwlink/?linkid=861154) section 10.2, are a set of alternatives of XML markup and character data, of which no more than one can be processed by a markup consumer. A markup consumer chooses from among the alternatives based upon its set of understood namespaces.

The following alternate-content elements are supported.

| Element Name | Specified in |
| --- | --- |
| AlternateContent | [ISO/IEC29500-3:2015] section 10.2.1 |
| Choice | [ISO/IEC29500-3:2015] section 10.2.2 |
| Fallback | [ISO/IEC29500-3:2015] section 10.2.3 |

## ShapeSheet Properties

The ShapeSheet properties sections that follow specify the different types of [Section\_Type](#Section_735b599d1359476785931c508a885779), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), and [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements in a [sheet](#Section_fd48786aaeee44ce84b100884dc31200).

### Sections

The following sections specify the pre-defined [sections](#Section_f8718337db6e434fb0bf7aa1fc4ef27b) that can exist for a [sheet](#Section_fd48786aaeee44ce84b100884dc31200). Each section is specified by a [Section\_Type](#Section_735b599d1359476785931c508a885779) child element of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), or [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) element. Other sections can be defined through [sheet extensibility](#Section_c443f7e03a254e5c9c627f92864d4890).

The **N** attribute of a Section\_Type element MUST be equal to one of the values defined in the following sections, unless it is defined through sheet extensibility. The meaning of the attribute is specified in the corresponding section.

#### Actions

**Actions** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### ActionTag

**ActionTag** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Character

**Character** is a collection of related properties that specify the [character properties](#Section_c5dd283696ad47959dc458db5ab84015) of the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of a [shape](#Section_2995871af1b144e69754989fb760ee18). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Connection

**Connection** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Control

**Control** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Field

**Field** is a collection of related properties that specify the [text fields](#Section_511cd5d9640846e4b16b42d513a07558) of a [shape](#Section_2995871af1b144e69754989fb760ee18). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### FillGradient

**FillGradient** is a collection of properties that specify the fill color gradient of a [shape](#Section_2995871af1b144e69754989fb760ee18). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Geometry

**Geometry** is a collection of related properties that specify the [geometry visualization](#Section_b690bcd44466465b938fc0cf7019eb39). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

The first [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of this element MUST be of the type [MoveTo](#Section_c8d4bbc71acd4f058f8ef6cd21a85651), [RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8), [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d), or [InfiniteLine](#Section_aa836815e431444aa88e64450e7c5348).

#### Hyperlink

**Hyperlink** is a collection of related properties that specify the [shape hyperlinks](#Section_908fb9630f114c19b100fedb1f768c67). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Layer

**Layer** is a collection of properties that specify all layers defined on a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). The collection MUST be the child of a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element.

#### LineGradient

**LineGradient** is a collection of related properties that specify the line color gradient of a [shape](#Section_2995871af1b144e69754989fb760ee18). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Paragraph

**Paragraph** is a collection of related properties that specify the [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab) of the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of a [shape](#Section_2995871af1b144e69754989fb760ee18). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Property

**Property** is a collection of related properties that specify the [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Reviewer

**Reviewer** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb). The collection MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### Scratch

**Scratch** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb). The collection MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), or [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Tabs

**Tabs** is a collection of related properties that specify the [tabs properties](#Section_7ae7864a00ec483d9391508c764ba856) of the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of a [shape](#Section_2995871af1b144e69754989fb760ee18). The collection MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### User

**User** is a collection of properties that are used for [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb). The collection MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), or [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

If the **N** attribute of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of a User [Section\_Type](#Section_735b599d1359476785931c508a885779) element is in a [UserRowNames](#Section_f120b280d58f4d24ac3a925337fb8af3), that element specifies additional properties.

### GeometryRowTypes

The following **GeometryRowTypes** sections specify the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) elements that make up [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb)s. They specify the allowable XML structures that can exist under a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) element.  The heading of each section specifies the **T** attribute required for that structure.

The **T** attribute of a Row\_Type element of a Geometry Section\_Type element MUST be equal to one of the structures defined in the following sections. The meaning of the attribute is specified in the corresponding section.

#### ArcTo

The **ArcTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a circular arc in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the ending vertex of the arc. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the ending vertex of the arc. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the distance from the arc’s midpoint to the midpoint of its chord. |

#### Ellipse

The **Ellipse** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies the [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) of an ellipse. An ellipse is specified by its center point and two points on the ellipse.

A [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) element that contains this Row\_Type MUST NOT contain any other Row\_Types.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the center point. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the center point. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the x-coordinate of the first point on the ellipse. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specified the y-coordinate of the first point on the ellipse. |
| [C](#Section_88e707f90b2d4ccf9ae7e9aaaed5a7f8) | Specified the x-coordinate of the second point on the ellipse. |
| [D](#Section_c7348e43b8a84fa6a061fe303135c8f4) | Specified the y-coordinate of the second point on the ellipse. |

#### EllipticalArcTo

The **EllipticalArcTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies an elliptical arc in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the endpoint. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the endpoint. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the x-coordinate of a point on the arc. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the y-coordinate of a point on the arc. |
| [C](#Section_88e707f90b2d4ccf9ae7e9aaaed5a7f8) | Specifies the angle of an arc's major axis relative to the x-axis of its parent [shape](#Section_2995871af1b144e69754989fb760ee18). |
| [D](#Section_c7348e43b8a84fa6a061fe303135c8f4) | Specifies the ratio of an arc's major axis to its minor axis. |

#### InfiniteLine

The **InfiniteLine** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies the [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) of an infinite line. The infinite line is specified by two points.

A [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) element that contains this Row\_Type element MUST NOT contain any other Row\_Type elements.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the first point. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the first point. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the x-coordinate of the second point. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the y-coordinate of the second point. |

#### LineTo

The **LineTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a line segment in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the ending vertex of the line segment. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the ending vertex of the line segment. |

#### MoveTo

The **MoveTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies either the starting vertex of a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) or the first vertex after a break in a path.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the vertex. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the vertex. |

#### NURBSTo

The **NURBSTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a Non-Uniform Rational B-Spline (NURBS) in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the endpoint of a [NURBS](#Section_eecdfe10f361434ca5a827668bad6404). |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the endpoint of a NURBS. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the second to the last knot of the NURBS. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the last weight of the NURBS. |
| [C](#Section_88e707f90b2d4ccf9ae7e9aaaed5a7f8) | Specifies the first knot of the NURBS. |
| [D](#Section_c7348e43b8a84fa6a061fe303135c8f4) | Specifies the first weight of the NURBS. |
| [E](#Section_99f38d547d8741488fb7b4e1f4347ddf) | Specifies a formula that MUST contain a NURBS function. |

#### PolylineTo

The **PolylineTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a polyline segment in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the ending vertex of the last line segment. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the ending vertex of the last line segment. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies a formula that MUST contain a [polyline](#Section_b81ec59d54424f1d93b5931a65729ad4) function. |

#### RelCubBezTo

The **RelCubBezTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a cubic Bezier in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). Coordinates are specified as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). A cubic Bezier is specified by its endpoint and two control points, one at the beginning of the curve and the other at the end of the curve.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the endpoint in relative coordinates. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the endpoint in relative coordinates. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the x-coordinate of the control point at the beginning of the curve in relative coordinates. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the y-coordinate of the control point at the beginning of the curve in relative coordinates. |
| [C](#Section_88e707f90b2d4ccf9ae7e9aaaed5a7f8) | Specifies the x-coordinate of the control point at the end of the curve in relative coordinates. |
| [D](#Section_c7348e43b8a84fa6a061fe303135c8f4) | Specifies the y-coordinate of the control point at the end of the curve in relative coordinates. |

#### RelEllipticalArcTo

The **RelEllipticalArcTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies an elliptical arc in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). Coordinates are specified as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the endpoint in relative coordinates. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the endpoint in relative coordinates. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the x-coordinate of the arc's control point in relative coordinates. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the y-coordinate of an arc's control point in relative coordinates. |
| [C](#Section_88e707f90b2d4ccf9ae7e9aaaed5a7f8) | Specifies the angle of an arc's major axis relative to the x-axis of its parent. |
| [D](#Section_c7348e43b8a84fa6a061fe303135c8f4) | Specifies the ratio of an arc's major axis to its minor axis. |

#### RelLineTo

The **RelLineTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a line segment in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). Coordinates are specified as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the ending vertex of a line segment in relative coordinates. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the ending vertex of a line segment in relative coordinates. |

#### RelMoveTo

The **RelMoveTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies either the starting vertex of a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb)or the first vertex after a break in a path. Coordinates are specified as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab).

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the vertex in relative coordinates. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the vertex in relative coordinates. |

#### RelQuadBezTo

The **RelQuadBezTo** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a quadratic Bezier in a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). Coordinates are specified as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). A quadratic Bezier is specified by its endpoint and one control point.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of the endpoint in relative coordinates. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of the endpoint in relative coordinates. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the x-coordinate of the control point in relative coordinates. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the y-coordinate of the control point in relative coordinates. |

#### SplineKnot

The **SplineKnot** structure is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a knot of a spline. A spline knot is specified by an endpoint and one control point.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of a control point. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of a control point. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies a knot of the spline. |

#### SplineStart

The **SplineStart** is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies properties of a spline.

The [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of this structure MUST be a value from the following table.

| Cell\_Type element | Meaning |
| --- | --- |
| [X](#Section_d508318965a44cb1ada9a40e0b1e3b24) | Specifies the x-coordinate of a spline's second control point. |
| [Y](#Section_99106ddc279843e794d0bb3a79cd86c7) | Specifies the y-coordinate of a spline's second control point. |
| [A](#Section_94bd6863691942828646c493b66e84bf) | Specifies the second knot of the spline. |
| [B](#Section_5b63ed9f89514ab9bab47f6ea9a8fb1c) | Specifies the first knot of a spline. |
| [C](#Section_88e707f90b2d4ccf9ae7e9aaaed5a7f8) | Specifies the last knot of a spline. |
| [D](#Section_c7348e43b8a84fa6a061fe303135c8f4) | Specifies the degree of a spline. The value of the structure MUST be greater than or equal to zero, and less than or equal to 25. |

### UserRowNames

The following sections specify the pre-defined [rows](#Section_d74a66b474714467b154ea4f60de7fdd) that can exist within a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b) for a [sheet](#Section_fd48786aaeee44ce84b100884dc31200). Each row is specified by a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of a User [Section\_Type](#Section_735b599d1359476785931c508a885779) element. Other rows can be defined through [sheet extensibility](#Section_c443f7e03a254e5c9c627f92864d4890).

If the **N** attribute of a Row\_Type child element of a User Section\_Type element is equal to one of the values defined in the following sections. The meaning of the Row\_Type element is specified in the corresponding section.

#### msvShapeCategories

The value of the **msvShapeCategories** user row is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) structure representing a category list. The category list is a semicolon-delimited collection of category name strings as per the following:

**ABNF:**

1. category-list = [category \*( ";" category )]
2. category = \*(%x20-3A/%3C-7E); same as string-value minus the ";"

#### msvThemeAccentColor

The **msvThemeAccentColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) or [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **AccentColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37) or the **AccentColor** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeDarkColor

The **msvThemeDarkColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **DarkColor** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeLightColor

The **msvThemeLightColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **LightColor** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeAccentColor6

The **msvThemeAccentColor6** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **AccentColor6** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeAccentColor2

The **msvThemeAccentColor2** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) or [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **AccentColor2** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37) or the **AccentColor2** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeAccentColor3

The **msvThemeAccentColor3** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) or [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **AccentColor3** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37) or the **AccentColor3** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeAccentColor4

The **msvThemeAccentColor4** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) or [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **AccentColor4** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37) or the **AccentColor4** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeAccentColor5

The **msvThemeAccentColor5** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) or [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **AccentColor5** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37) or the **AccentColor5** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeAsianFont

The **msvThemeAsianFont** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) that specifies the **AsianFont** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vTheme](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeBackgroundColor

The **msvThemeBackgroundColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) or [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **BackgroundColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37) or the **AccentColor5** property of a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) as specified in [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26).

#### msvThemeColors

The **msvThemeColors** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

This Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the index of a fixed color scheme as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37). If the value of the structure of the Value Cell\_Type child element is equal to 254, this Value specifies a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d).

#### msvThemeComplexFont

The **msvThemeComplexFont** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) that specifies the **ComplexFont** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorBegin

The **msvThemeConnectorBegin** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the **ConnectorBegin** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorBeginSize

The **msvThemeConnectorBeginSize** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the **ConnectorBeginSize** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorColor

The **msvThemeConnectorColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **ConnectorColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorEnd

The **msvThemeConnectorEnd** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the **ConnectorEnd** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorEnd2

The **msvThemeConnectorEnd2** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the **ConnectorEnd2** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorEndSize

The **msvThemeConnectorEndSize** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the **ConnectorEndSize** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorPattern

The **msvThemeConnectorPattern** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the **ConnectorPattern** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorRounding

The **msvThemeConnectorRounding** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) that specifies the **ConnectorRounding** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorTransparency

The **msvThemeConnectorTransparency** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) structure that specifies the **ConnectorTransparency** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeConnectorWeight

The **msvThemeConnectorWeight** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) that specifies the **ConnectorWeight** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeEffects

The **msvThemeEffects** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) that specifies the index of a fixed effect scheme as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37). If the value of the structure of the Value Cell\_Type child element is equal to 254, this Value specifies a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d).

#### msvThemeFillColor

The **msvThemeFillColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **FillColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeFillColor2

The **msvThemeFillColor2** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **FillColor2** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeFillPattern

The **msvThemeFillPattern** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) that specifies the **FillPattern** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeFillTransparency

The **msvThemeFillTransparency** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) structure that specifies the **FillTransparency** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeLatinFont

The **msvThemeLatinFont** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) that specifies the **LatinFont** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeLineColor

The **msvThemeLineColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **LineColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeLinePattern

The **msvThemeLinePattern** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) that specifies the **LinePattern** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeLineRounding

The **msvThemeLineRounding** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) that specifies the **LineRounding** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeLineTransparency

The **msvThemeLineTransparency** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) structure that specifies the **LineTransparency** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeLineWeight

The **msvThemeLineWeight** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) that specifies the **LineWeight** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowColor

The **msvThemeShadowColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **ShadowColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowDirection

The **msvThemeShadowDirection** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the **ShadowDirection** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowMagnification

The **msvThemeShadowMagnification** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) structure that specifies the **ShadowMagnification** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowPattern

The **msvThemeShadowPattern** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) that specifies the **ShadowPattern** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowStyle

The **msvThemeShadowStyle** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) that specifies the **ShadowPattern** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowTransparency

The **msvThemeShadowTransparency** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) structure that specifies the **ShadowTransparency** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowXOffset

The **msvThemeShadowXOffset** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) that specifies the **ShadowXOffset** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeShadowYOffset

The **msvThemeShadowYOffset** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) that specifies the **ShadowYOffset** property of a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### msvThemeTextColor

The **msvThemeTextColor** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) that specifies the **TextColor** property of a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) as specified in [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37).

#### visUSEType

The **visUSETTYpe** element is a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that specifies a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) property. It MUST have a [Value](#Section_4919da7a6e944e0b8a77a96f67544087) child element of the type [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The Value child element is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) structure that specifies the type of a master when the master is not used in [shape inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). If the master is used in shape inheritance this user row MUST NOT exist.

The value of the structure MUST equal a value from the following table.

| Value | Meaning |
| --- | --- |
| 0 | This is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. |
| 1 | This is used during formula evaluation only. |
| 2 | Specifies that this is a [custom fixed effect scheme](#Section_ab95740a3f624387b40b003c118f409d) master. |
| 3 | Specifies that this is a custom fixed color scheme master. |

### Cells

The following sections specify the pre-defined [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) that can exist for a [sheet](#Section_fd48786aaeee44ce84b100884dc31200). Each cell is specified by a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of a [Section\_Type](#Section_735b599d1359476785931c508a885779), [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639), [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d), [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120), [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef), or [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) element. Other cells can be defined through [sheet extensibility](#Section_c443f7e03a254e5c9c627f92864d4890).

The **N** attribute of a Cell\_Type element MUST be equal to one of the values defined in the following sections, unless it is defined through sheet extensibility. The meaning of the attribute is specified in the corresponding section.

#### A

The **A** cell is a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) or a [vScalar](#Section_53aa08d870b047449a94608d01487e40), [vAny](#Section_4a97b6616cca49a7911670b57c9379d2) or [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies a property of a [shape](#Section_2995871af1b144e69754989fb760ee18) according to the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) of its parent element. It MUST have a Row\_Type parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) or [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If **A** has an [ArcTo](#Section_ba9a42aba66841c9b4165fa04698f719), [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d), [EllipticalArcTo](#Section_c02155d1394e47448723d474f6ec82e2), or [InfiniteLine](#Section_aa836815e431444aa88e64450e7c5348) Row\_Type parent element, it is a vLength that specifies [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) information according to the Row\_Type.

If **A** has a [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a), [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), [RelQuadBezTo](#Section_5ef65107af0d4883a080f721fab64b8d), [SplineStart](#Section_bf648f0d5fcd477e99e3da60d7bdbea8), or [SplineKnot](#Section_2d9eb38c23c44bf59bd6b58b64fc5d2f) Row\_Type parent element, it is a vScalar that specifies geometry path information according to the Row\_Type.

If **A** has a [PolylineTo](#Section_fbee463785994947990565fd8fbf6481) parent element, it is a formula expression that MUST contain a [polyline](#Section_b81ec59d54424f1d93b5931a65729ad4) function.

If **A** is a descendant element of a Scratch Section\_Type element, it is a vAny that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### Action

The **Action** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Active

The **Active** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### AddMarkup

The **AddMarkup** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### Address

The **Address** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies a [**Uniform Resource Identifier (URI)**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) hyperlink of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### AlignBottom

The **AlignBottom** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### AlignCenter

The **AlignCenter** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### AlignLeft

The **AlignLeft** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Alignment

The **Alignment** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the tab alignment for a [tabs property](#Section_7ae7864a00ec483d9391508c764ba856). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Tabs](#Section_1ebf938deeb2454486090feeb086cf2c) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element. It MUST have an **N** attribute with the following format.

Alignment*#*

*#* is an unsigned long integer, and MUST be less than or equal to 59.

The value of the structure is specified by the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies a tab stop with left alignment. The [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) extends to the right from the tab stop position. |
| 1 | Specifies a tab stop with center alignment. The text is centered at the tab stop position. |
| 2 | Specifies a tab stop with right alignment. The text extends to the left from the tab stop position. |
| 3 | Specifies a decimal tab stop, where aligns a decimal point at the tab stop position. Text without a decimal point extends to the left of the tab stop position. |
| 4 or greater | Specifies a decimal tab stop. |

#### AlignMiddle

The **AlignMiddle** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### AlignRight

The **AlignRight** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### AlignTop

The **AlignTop** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Angle

The **Angle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) or [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the angle of rotation of a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape’s [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

If the structure is a vScalar, the value MUST be expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e) custom internal unit number. Increasing numbers indicate counterclockwise rotation.

#### AsianFont

The **AsianFont** cell is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) structure that specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) used for Asian characters in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is equal to zero or if the font specified does not include Asian characters, the font specified by the sibling [Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is used in its place.

#### AutoGen

The **AutoGen** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### AvenueSizeX

The **AvenueSizeX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### AvenueSizeY

The **AvenueSizeY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### AvoidPageBreaks

The **AvoidPageBreaks** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### B

The **B** cell is a [vScalar](#Section_53aa08d870b047449a94608d01487e40), [vAny](#Section_4a97b6616cca49a7911670b57c9379d2) or [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies a property of a [shape](#Section_2995871af1b144e69754989fb760ee18) according to the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) of its parent element. It MUST have a Row\_Type parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) Section\_Type parent element.

If the structure has an [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d), [EllipticalArcTo](#Section_c02155d1394e47448723d474f6ec82e2), or [InfiniteLine](#Section_aa836815e431444aa88e64450e7c5348) Row\_Type parent element, it is a vLength that specifies the [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) information according to the Row\_Type.

If the structure has a [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a), [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), [RelQuadBezTo](#Section_5ef65107af0d4883a080f721fab64b8d), or [SplineStart](#Section_bf648f0d5fcd477e99e3da60d7bdbea8) Row\_Type parent element, it is a vScalar that specifies the geometry path information according to the Row\_Type.

If the structure is a descendant element of a Scratch Section\_Type element, it is a vAny and used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### BeginArrow

The **BeginArrow** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies an arrowhead at the first vertex of a one-dimensional [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | No arrowhead. |
| 1 | Arrow head 1. Line arrow head |
| 2 | Arrow head 2. Triangle arrow head |
| 3 | Arrow head 3. Medium line arrow head. |
| 4 | Arrow head 4. Medium triangle arrow head |
| 5 | Arrow head 5. Triangle arrow head with inward curve at base. |
| 6 | Arrow head 6. Triangle arrow head with outward curve at base. |
| 7 | Arrow head 7. Curved line arrow head |
| 8 | Arrow head 8. Triangle arrow head with inward curves on all 3 sides |
| 9 | Arrow head 9. Upward angled line |
| 10 | Arrow head 10. Round |
| 11 | Arrow head 11. Square |
| 12 | Arrow head 12. Large line arrow head |
| 13 | Arrow head 13. Large triangle arrow head |
| 14 | Arrow head 14. Large triangle no fill |
| 15 | Arrow head 15. Small triangle no fill |
| 16 | Arrow head 16. Medium triangle no fill |
| 17 | Arrow head 17. Triangle with inward curved base, no fill |
| 18 | Arrow head 18. Triangle withou outward curved base, no fill |
| 19 | Arrow head 19. Triangle with all sides curved inwards, no fill |
| 20 | Arrow head 20. Circle with no fill |
| 21 | Arrow head 21. Square with no fill |
| 22 | Arrow head 22. Diamond with no fill |
| 23 | Arrow head 23. Downward angled line intersecting shaft |
| 24 | Arrow head 24. Vertical line intersecting shaft |
| 25 | Arrow head 25. 2 vertical lines intersecting shaft |
| 26 | Arrow head 26. 3 vertical lines intersecting shaft |
| 27 | Arrow head 27. Inverted line arrow head |
| 28 | Arrow head 28. Inverted line arrow head with vertical line intersecting shaft |
| 29 | Arrow head 29. Inverted line arrow head with cirle, no fill |
| 30 | Arrow head 30. Vertical line intersecting shaft, circle no fill |
| 31 | Arrow head 31. Circle no fill, vertical line intersecting shaft |
| 32 | Arrow head 32. Circle no fill, 2 vertical lines intersecting shaft |
| 33 | Arrow head 33. Circle no fill, 3 vertical lines intersecting shaft |
| 34 | Arrow head 34. Circle no fill, diamond no fill |
| 35 | Arrow head 35. Circle, vertical line intersecting shaft |
| 36 | Arrow head 36. Circle, 2 vertical lines intersecting shaft |
| 37 | Arrow head 37. Circle, 3 vertical lines intersecting shaft |
| 38 | Arrow head 38. Circle, diamong with no fill |
| 39 | Arrow head 39. Double triangle |
| 40 | Arrow head 40. Double triangle no fill |
| 41 | Arrow head 41. Circle no fill |
| 42 | Arrow head 42. Circle |
| 43 | Arrow head 42. Double line arrow |
| 44 | Arrow head 44. Line arrow with vertical line intersecting shaft |
| 45 | Arrow head 45. Double line arrow with vertical line intersecting shaft |
| 254 | Use the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) that is specified by the formula associated with this cell for the  Arrowhead. |

#### BeginArrowSize

The **BeginArrowSize** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the size of the arrowhead at the first vertex of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Very small |
| 1 | Small |
| 2 | Medium |
| 3 | Large |
| 4 | Extra Large |
| 5 | Jumbo |
| 6 | Colossal |

#### BeginGroup

The **BeginGroup** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### BeginX

The **BeginX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate of the beginning endpoint of a [one-dimensional shape](#Section_b46925c2f141485fb0227e47584972e8). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape’s](#Section_2995871af1b144e69754989fb760ee18) [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

If the one-dimensional shape has at least one [subshape](#Section_00285724289547c19f2f489ec5da125c), the structure is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### BeginY

The **BeginY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the y-coordinate of the beginning endpoint of a [one-dimensional shape](#Section_b46925c2f141485fb0227e47584972e8). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape’s](#Section_2995871af1b144e69754989fb760ee18) [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

If the one-dimensional shape has at least one [subshape](#Section_00285724289547c19f2f489ec5da125c), the structure is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### BegTrigger

The **BegTrigger** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### BevelBottomHeight

The **BevelBottomHeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of the bottom [bevel](#Section_0c4b75e7fcaf4f06a2acd4ad6d6d0e0b) on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If the value of the sibling [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element is zero, this value MUST be ignored.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 1584 points.

#### BevelBottomType

The **BevelBottomType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the preset [bevel](#Section_0c4b75e7fcaf4f06a2acd4ad6d6d0e0b) type for the bottom bevel on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the table specified in [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) cell.

#### BevelBottomWidth

The **BevelBottomWidth** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the width of the bottom [bevel](#Section_0c4b75e7fcaf4f06a2acd4ad6d6d0e0b) on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If the value of the sibling [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element is zero, this value MUST be ignored.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 1584 points.

#### BevelContourColor

The **BevelContourColor** cell is a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token that specifies the color of the outline on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

#### BevelContourSize

The **BevelContourSize** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the thickness of the outline on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 1584 points.

#### BevelDepthColor

The **BevelDepthColor** cell is a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token that specifies the extrusion color on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

#### BevelDepthSize

The **BevelDepthSize** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the extrusion depth on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 1584 points.

#### BevelLightingAngle

The **BevelLightingAngle** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the direction for lighting on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

The unit of the value is degrees. The value MUST be greater than or equal to zero, and less than 360. See [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.10.30 for details regarding the meaning of this value.

#### BevelLightingType

The **BevelLightingType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the preset type of lighting on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

The value of the structure MUST be from the following table. See [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.10.30 for details regarding the meaning of the listed values.

| Value | Meaning |
| --- | --- |
| 0 | None |
| 1 | Three Point |
| 2 | Balance |
| 3 | Soft |
| 4 | Harsh |
| 5 | Flood |
| 6 | Contrasting |
| 7 | Morning |
| 8 | Sunrise |
| 9 | Sunset |
| 10 | Chilly |
| 11 | Freezing |
| 12 | Flat |
| 13 | Two Point |
| 14 | Glow |
| 15 | Bright Room |

#### BevelMaterialType

The **BevelMaterialType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the preset surface appearance on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If both values of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element and [BevelBottomType](#Section_cffac3b9c23a47fb818214f08f04d93f) Cell\_Type element are zero, this value MUST be ignored.

The value of the structure MUST be from the following table. See [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.10.50 for details regarding the meaning of the listed values.

| Value | Meaning |
| --- | --- |
| 0 | None |
| 1 | Matte |
| 2 | Warm Matte |
| 3 | Plastic |
| 4 | Metal |
| 5 | Dark Edge |
| 6 | Soft Edge |
| 7 | Flat |
| 8 | Wireframe |
| 9 | Powder |
| 10 | Translucent Powder |
| 11 | Clear |

#### BevelTopHeight

The **BevelTopHeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of the top [bevel](#Section_0c4b75e7fcaf4f06a2acd4ad6d6d0e0b) on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If the value of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element is zero, this value MUST be ignored.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 1584 points.

#### BevelTopType

The **BevelTopType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the preset [bevel](#Section_0c4b75e7fcaf4f06a2acd4ad6d6d0e0b) type for the top bevel on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). The bevel type specifies the appearance of a bevel. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | None |
| 1 | Circle |
| 2 | Relaxed Inset |
| 3 | Cross |
| 4 | Cool Slant |
| 5 | Angle |
| 6 | Soft Round |
| 7 | Convex |
| 8 | Slope |
| 9 | Divot |
| 10 | Riblet |
| 11 | Hard Edge |
| 12 | Art Decoration |

#### BevelTopWidth

The **BevelTopWidth** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the width of the top [bevel](#Section_0c4b75e7fcaf4f06a2acd4ad6d6d0e0b) on a 3D [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If the value of the sibling [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element is zero, this value MUST be ignored.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 1584 points.

#### BlockSizeX

The **BlockSizeX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### BlockSizeY

The **BlockSizeY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Blur

The **Blur** cell is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) custom token grouping that specifies the degree of blurring of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies there is no blurring; a value of one specifies maximum blurring.

#### BottomMargin

The **BottomMargin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the margin between the bottom border of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) and the last line of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) it contains. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Brightness

The **Brightness** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the brightness of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of 0.5 is the default brightness. A value of less than 0.5 decreases the brightness of the image; a value of greater than 0.5 increases the brightness of the image.

#### Bullet

The **Bullet** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the bullet for a [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element. The bullet is specified by a character in a [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2).

A value of zero for the structure specifies no bullet is used. If there is a bullet, any non-empty character value of the sibling [BulletStr](#Section_a64f1c829a4f45d7914f7bd65d8a0e5c) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is used in its place; any font value not equal to zero of the sibling [BulletFont](#Section_dbade1efe63c40b1bc56d426897be651) Cell\_Type element is used in its place.

The value of the structure MUST be from the following table.

| Value | Character | Default Font | Appearance |
| --- | --- | --- | --- |
| 0 | None | None |  |
| 1 | 0xB7 | Symbol | • |
| 2 | 0x6F | Courier New | ◆ |
| 3 | 0xA7 | Wingdings | ▪ |
| 4 | 0x71 | Wingdings | □ |
| 5 | 0x76 | Wingdings | ❖ |
| 6 | 0xD8 | Wingdings | ➢ |
| 7 | 0xFC | Wingdings | ✓ |

#### BulletFont

The **BulletFont** cell is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) structure that specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) to use for the bullet of a [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### BulletFontSize

The **BulletFontSize** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) token grouping that specifies the font size for the bullet of a [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is greater than zero, the bullet font size is equal to the value of the structure. If the value of the structure is equal to zero, the font size is equal to the value of the font size of the first character following the bullet. If the value of the structure is less than zero, the font size is equal to the absolute value of the structure multiplied by the value of the font size of the first character following the bullet divided by 100.

#### BulletStr

The **BulletStr** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies the character or characters to use for the bullet of a [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### ButtonFace

The **ButtonFace** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element or a Row\_Type parent element that has an [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) Section\_Type parent element.

#### C

The **C** cell is a [vScalar](#Section_53aa08d870b047449a94608d01487e40), [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b), [vAny](#Section_4a97b6616cca49a7911670b57c9379d2) or [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies a property of a [shape](#Section_2995871af1b144e69754989fb760ee18) according to the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) of its parent element. It MUST have a Row\_Type parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) Section\_Type parent element.

If the structure has an [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d) Row\_Type parent element, it is a vLength that specifies the [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) information according to the Row\_Type.

If the structure has an [EllipticalArcTo](#Section_c02155d1394e47448723d474f6ec82e2) or [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), it is a vAngle that specifies the geometry path information according to the Row\_Type.

If the structure has a [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a), [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), or [SplineStart](#Section_bf648f0d5fcd477e99e3da60d7bdbea8) Row\_Type parent element, it is a vScalar that specifies geometry path information according to the Row\_Type.

If **C** is a descendant element of a Scratch Section\_Type element, the structure is a vAny that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### Calendar

The **Calendar** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the calendar system to use when formatting dates and times. The value of the structure MUST be specified by the [vCalendar](#Section_5d9ab6aa8a0646468771d3ff0e02ce96) structure. It MUST have either a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [Property](#Section_0489948cf7944ce3a3929525e6865bec) Section\_Type parent element.

If **Calendar** is a descendant of a Field Section\_Type element, it specifies the calendar system used when formatting the [text field](#Section_511cd5d9640846e4b16b42d513a07558) specified by the element’s parent Row\_Type element. It is unused and MUST be ignored if it does not have a sibling [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element with an **N** attribute equal to "Type" and structure value equal to five.

If **Calendar** is a descendant of a Property Section\_Type element, it specifies the calendar system to use when formatting the data specified by the element’s parent Row\_Type element. It is unused and MUST be ignored if it does not have a sibling Cell\_Type element with an **N** attribute equal to "Type" and structure value equal to five.

If **Calendar** is a child of a ShapeSheet\_Type element, it is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### CanGlue

The **CanGlue** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Control](#Section_b41c74816cdc48db9ae346d652f65e14) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Case

The **Case** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the displayed case of the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that all characters are displayed with no changes to the case. |
| 1 | Specifies that all characters are capitalized. |
| 2 | Specifies that initial characters of each word are capitalized. |

#### CenterX

The **CenterX** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### CenterY

The **CenterY** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Checked

The **Checked** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### ClippingPath

The **ClippingPath** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies a [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) used to clip an image. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element. If the value of the structure is a [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd) associated with a geometry path, the image is clipped according to the geometry path; otherwise, the image is not clipped.

The [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) element that specifies the associated geometry path MUST have the same ShapeSheet\_Type or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element as the **ClippingPath** cell.

#### Color

The **Color** cell is a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token that specifies either the color used for characters in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553), the color used for stops in a fill gradient [fill property](#Section_52745b68d28443b9a8f0564732579b99), the color used for stops in a line gradient [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9), or the color used for a [layer](#Section_4a598344a53a40d89e994077ee09d069). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element, a [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) Section\_Type parent element, a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) Section\_Type parent element, a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) Section\_Type parent element, or a [Reviewer](#Section_a46803c1647d4a23abe5aa7f07bb02b0) Section\_Type parent element.

The use of the value of the structure is specified by the parent element Section\_Type of the Row\_Type parent element as specified in the following table.

| Parent element Section\_Type of the Row\_Type parent element | Meaning |
| --- | --- |
| Character | Specifies the color used for characters in a text run**.** |
| FillGradient | Specifies the color used for a stop in a fill gradient fill property. |
| LineGradient | Specifies the color used for a stop in a line gradient line property. |
| Layer | Specifies the color used for a layer. |
| Reviewer | Specifies that the value of the structure is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. |

#### ColorSchemeIndex

The **ColorSchemeIndex** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the color scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65535.

If the value of the **V** attribute is equal to 65535, the color scheme is specified by a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) specified by the [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element associated with a [master](#Section_04e031963af24a52bd32ef5d79b9efc5) whose **UniqueID** attribute is equal to the argument of the [USE](#Section_baa06b88433f4e3093dac8a5b870e6b9) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) of the **F** attribute of the **ColorSchemeIndex** [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element.

If the value of the structure is equal to 0, color is specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9).

If the value of the **V** attribute is equal to 65534, the index of the color scheme dynamic theme component of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **ColorSchemeIndex** Cell\_Type descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

#### ColorTrans

The **ColorTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the color transparency used for characters in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553), the color transparency used for stops in a fill gradient [fill property](#Section_52745b68d28443b9a8f0564732579b99), the color transparency used for stops in a line gradient [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9), or the color transparency used for a [layer](#Section_4a598344a53a40d89e994077ee09d069). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element, a [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) Section\_Type parent element, a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) Section\_Type parent element, or a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) Section\_Type parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies that the color is completely opaque; a value of one specifies that the color is completely transparent.

The use of the value of the structure is specified by the parent element Section\_Type of the Row\_Type parent element as specified in the following table.

| Parent element Section\_Type of the Row\_Type parent element | Meaning |
| --- | --- |
| Character | Specifies the color transparency used for characters in a text run**.** |
| FillGradient | Specifies the color transparency used for a stop in a fill gradient fill property. |
| LineGradient | Specifies the color transparency used for a stop in a line gradient line property. |
| Layer | Specifies the color transparency used for a layer. |

#### Comment

The **Comment** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token containing plain text annotations with no specification. It is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have either a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element, or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ComplexScriptFont

The ComplexScriptFont cell is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) structure that specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) used for complex script characters in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is equal to zero or if the font specified does not include complex script characters, the font specified by the sibling [Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is used in its place.

#### ComplexScriptSize

The **ComplexScriptSize** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the font size used for complex script characters in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is greater than zero, the font size is equal to the value of the structure. If the value of the structure is equal to zero, the font size is equal to the value of the sibling [Size](#Section_d905a600d3c94f5181d83f51117ebbc4) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element. If the value of the structure is less than zero, the font size is equal to the absolute value of the structure multiplied by the value of the sibling Size Cell\_Type element divided by 100.

#### CompoundType

The **CompoundType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the compound line style for a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies a single line. |
| 1 | Compound line 1. Double line |
| 2 | Compound line 2. Thick line over thin line |
| 3 | Compound line 3. Thin line over thick line |
| 4 | Compound line 4. Thin line over thick line over thin line |

#### ConFixedCode

The **ConFixedCode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ConLineJumpCode

The **ConLineJumpCode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ConLineJumpDirX

The **ConLineJumpDirX** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ConLineJumpDirY

The **ConLineJumpDirY** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ConLineJumpStyle

The **ConLineJumpStyle** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ConLineRouteExt

The **ConLineRouteExt** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ConnectorSchemeIndex

The **ConnectorSchemeIndex** is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the connector scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is equal to 0, [formats](#Section_f63759284c0642dda31cbbab14930e93) are specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9).

If the value of the **V** attribute is equal to 65534, the index of the connector scheme dynamic theme component of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **ConnectorSchemeIndex** Cell\_Type descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

#### Contrast

The **Contrast** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the contrast of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of 0.5 is the default contrast. A value of less than 0.5 decreases the contrast of the image; a value of greater than 0.5 increases the contrast of the image.

#### Copyright

The **Copyright** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element with an **ID** attribute equal to zero.

#### CtrlAsInput

The **CtrlAsInput** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### CurrentIndex

The **CurrentIndex** cell is a [PtgShort](#Section_f7b9155c4ceb4742bdf4db90e2d5220c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Reviewer](#Section_a46803c1647d4a23abe5aa7f07bb02b0) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### D

The **D** cell is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) or [vAny](#Section_4a97b6616cca49a7911670b57c9379d2) or [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies a property of a [shape](#Section_2995871af1b144e69754989fb760ee18) according to the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) of its parent element. It MUST have a Row\_Type parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) Section\_Type parent element.

If **D** has an [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d) Row\_Type parent element, it is a vLength that specifies [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) information according to the Row\_Type.

If **D** has an [EllipticalArcTo](#Section_c02155d1394e47448723d474f6ec82e2), [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a), or [SplineStart](#Section_bf648f0d5fcd477e99e3da60d7bdbea8) Row\_Type parent element, it is a vScalar that specifies geometry path information according to the Row\_Type.

If **D** is a descendant element of a Scratch Section\_Type element, it is a vAny that used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### DataLinked

The **DataLinked** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies that a [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) item of the [data bound](#Section_9ab2ddda33b5434d9256bd769e300cd1) [shape](#Section_2995871af1b144e69754989fb760ee18) is mapped to a [**field**](#gt_f819dd42-7f44-4613-8231-d5ad47f2bbcc) of a [recordset](#Section_5c84498371344d01bcee8e705c2efd1c). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element. If the shape is not a data bound shape, the token is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

A value of one specifies that the shape data item is mapped to a field of recordset; a value of zero specifies that the shape data item is not mapped to a field of recordset.

#### DblUnderline

The **DblUnderline** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) has a double underline [character property](#Section_c5dd283696ad47959dc458db5ab84015). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the text run has a double underline; a value of zero specifies that the text run does not have a double underline.

#### Default

The **Default** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether a hyperlink is the default hyperlink. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the hyperlink is the default hyperlink; a value of zero specifies that the hyperlink is not the default hyperlink.

#### DefaultTabStop

The **DefaultTabStop** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the default spacing between [tabs](#Section_7ae7864a00ec483d9391508c764ba856) in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Denoise

The **Denoise** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the amount of noise reduction applied to an [image](#Section_c7915a6e1cd84633ad57261c2da081ae) by modifying pixels that have randomly distributed color levels when compared to their surrounding pixels. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no noise reduction. As the value of the structure increases, more noise reduction is applied.

#### Description

The **Description** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies a description of a hyperlink. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### DirX

The **DirX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### DirY

The **DirY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Disabled

The **Disabled** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have either a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element or a Row\_Type parent element that has an [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) Section\_Type parent element.

#### DisplayLevel

The **DisplayLevel** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### DisplayMode

The **DisplayMode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the way [shape](#Section_2995871af1b144e69754989fb760ee18) information is displayed. It MUST have either a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element, a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element, or a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If **DisplayMode** has a Row\_Type parent element, the token is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

If **DisplayMode** has a ShapeSheet\_Type parent element or a StyleSheet\_Type parent element, the value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the shape and its text is hidden. |
| 1 | Specifies that the shape is displayed behind its [member shapes](#Section_00285724289547c19f2f489ec5da125c). |
| 2 | Specifies that the shape is displayed in front of its member shapes. |

#### DistanceFromGround

The **DistanceFromGround** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the distance that a [shape](#Section_2995871af1b144e69754989fb760ee18) with 3D rotation properties (section [2.2.7.3.7](#Section_46d31e14551941d18e7b25c18480a570)) is raised from ground. The ground is the plane where the z-coordinate value is zero in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to (-4000.0 / 72.0) inches, and less than or equal to (4000.0 / 72.0) inches. If the shape does not have [2.2.7.3D rotation properties](#Section_eef94b47f838406e8de5203e0204794a), the token is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### DocLangID

The **DocLangID** cell is a [vLanguageString](#Section_f91b1356cff14c718a04247007cbe4c9) structure that specifies the locale settings of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) as specified in [[RFC4646]](https://go.microsoft.com/fwlink/?LinkId=123591) and [[RFC4647]](https://go.microsoft.com/fwlink/?LinkId=113490). It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element, and MUST be equal to the value of the Language property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML Part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### DocLockDuplicatePage

The **DocLockDuplicatePage** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### DocLockReplace

The **DocLockReplaccell** is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### DontMoveChildren

The **DontMoveChildren** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### DoubleStrikethrough

The **DoubleStrikethrough** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) has a double strikethrough [character property](#Section_c5dd283696ad47959dc458db5ab84015). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the text run has a double strikethrough; a value of zero specifies that the text run does not have a double strikethrough.

#### DrawingResizeType

The **DrawingResizeType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### DrawingScale

The **DrawingScale** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies a unit of distance used to define the [scale](#Section_a607b6836eed4a8480753cd045758142) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

The default value of the structure is one inch.

#### DrawingScaleType

The **DrawingScaleType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the type of [scale](#Section_a607b6836eed4a8480753cd045758142) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | No Scale |
| 1 | Architectural Scale |
| 2 | Civil Engineering Scale |
| 3 | Custom Scale |
| 4 | Metric Scale |
| 5 | Mechanical Engineering Scale |

The default value is zero.

#### DrawingSizeType

The **DrawingSizeType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the type of [size](#Section_a607b6836eed4a8480753cd045758142) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

| Value | Meaning |
| --- | --- |
| 0 | Same as Print Setup |
| 1 | Tightly enclose objects on Page |
| 2 | Standard Physical Page Size |
| 3 | Custom Physical Page Size |
| 4 | Logical Page Size |
| 5 | Metric Page Size |
| 6 | ANSI Engineering Page Size |
| 7 | ANSI Architectural Page Size |

The default value is zero.

#### DropOnPageScale

The **DropOnPageScale** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### DynamicsOff

The **DynamicsOff** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### DynFeedback

The **DynFeedback** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### E

The **E** cell is a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) that specifies the NURBS formula of a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) of a non-uniform rational B-spline(NURBS). It MUST have a [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### EffectSchemeIndex

The **EffectSchemeIndex** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) token that specifies the index of the effect scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is equal to 0, [formats](#Section_f63759284c0642dda31cbbab14930e93) are specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9).

If the value of the **V** attribute is equal to 65534, the index of the effect scheme dynamic theme component of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **EffectSchemeIndex** Cell\_Type descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

#### EmbellishmentIndex

The **EmbellishmentIndex** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies [embellishment](#Section_3109f5643c584956b2d17995824f5343) information. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the **V** attribute is equal to 65534, the embellishment information of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **EmbellishmentIndex** [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

If the value of the **V** attribute is equal to 0, the embellishment information of a shape is specified by the [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575) of a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

#### EnableFillProps

The **EnableFillProps** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [fill properties](#Section_52745b68d28443b9a8f0564732579b99) of a [style](#Section_b01703e4a485477d9128e93a52880888) are included in [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). It MUST have a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of one specifies that the fill properties are included in style inheritance; a value of zero specifies that the fill properties are not included in style inheritance.

#### EnableGrid

The **EnableGrid** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### EnableLineProps

The **EnableLineProps** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [line properties](#Section_52745b68d28443b9a8f0564732579b99) of a [style](#Section_b01703e4a485477d9128e93a52880888) are included in [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). It MUST have a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of one specifies that the line properties are included in style inheritance; a value of zero specifies that the line properties are not included in style inheritance.

#### EnableTextProps

The **EnableTextProps** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies the [character properties](#Section_c5dd283696ad47959dc458db5ab84015), [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab), [tabs properties](#Section_7ae7864a00ec483d9391508c764ba856) and [text block format](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [style](#Section_b01703e4a485477d9128e93a52880888) are included in [inheritance](#Section_5865d55af28e4dc7b02d79e35e8cd7eb). It MUST have a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of one specifies that the character properties, paragraph properties, tabs properties and text block format are included in style inheritance; a value of zero specifies that the character properties, paragraph properties, tabs properties and text block format are not included in style inheritance.

#### EndArrow

The **EndArrow** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies an arrowhead at the first vertex of a one-dimensional [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the table specified in the [BeginArrow](#Section_8f7d58be20e0433b841959add0650616) cell.

#### EndArrowSize

The **EndArrowSize** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the size of the arrowhead at the last vertex of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Very small |
| 1 | Small |
| 2 | Medium |
| 3 | Large |
| 4 | Extra Large |
| 5 | Jumbo |
| 6 | Colossal |

#### EndTrigger

The **EndTrigger** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### EndX

The **EndX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate of the ending endpoint of a [one-dimensional shape](#Section_b46925c2f141485fb0227e47584972e8). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape’s](#Section_2995871af1b144e69754989fb760ee18) [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

If the one-dimensional shape has at least one [subshape](#Section_00285724289547c19f2f489ec5da125c), the custom token grouping is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### EndY

The **EndY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the y-coordinate of the ending endpoint of a [one-dimensional shape](#Section_b46925c2f141485fb0227e47584972e8). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape’s](#Section_2995871af1b144e69754989fb760ee18) [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

If the one-dimensional shape has at least one [subshape](#Section_00285724289547c19f2f489ec5da125c), the custom token grouping is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### EventDblClick

The **EventDblClick** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### EventDrop

The **EventDrop** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### EventMultiDrop

The **EventMultiDrop** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### EventXFMod

The **EventXFMod** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ExtraInfo

The ExtraInfo cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies a URI query string or zoom level string of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) referenced by the [hyperlink](#Section_908fb9630f114c19b100fedb1f768c67). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The zoom level percentage is normalized such that 1 corresponds to 100 percent. If the hyperlink refers to a drawing page, the value of the structure is a zoom level string that is defined by the following:

ABNF

1. zoom-level-string = ["zoom=" zoom-level]
2. zoom-level = 1\*digit

#### FillBkgnd

The **FillBkgnd** cell is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type that specifies the color of the background [fill](#Section_52745b68d28443b9a8f0564732579b99) property of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### FillBkgndTrans

The **FillBkgndTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the transparency level of the background [fill](#Section_52745b68d28443b9a8f0564732579b99) property color of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies there is no transparency; a value of one specifies maximum transparency.

#### FillForegnd

The **FillForegnd** cell is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type that specifies the color of the foreground [fill](#Section_52745b68d28443b9a8f0564732579b99) property of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### FillForegndTrans

The **FillForegndTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the transparency level of the foreground [fill](#Section_52745b68d28443b9a8f0564732579b99) property color of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies there is no transparency; a value of one specifies maximum transparency.

#### FillGradientAngle

The **FillGradientAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the orientation of the fill color gradient of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of zero corresponds to the direction of the positive x-axis. If the sibling [FillGradientDir](#Section_e19c498a52774add99538b85cb2af250) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is not equal to zero, this value MUST be ignored.

#### FillGradientDir

The **FillGradientDir** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the type of the fill color gradient of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies a linear fill color gradient. |
| 1 | Specifies the fill color gradient of the shape is in radial mode from the bottom right corner of the bounding box of the shape. |
| 2 | Specifies the fill color gradient of the shape is in radial mode from the bottom left corner of the bounding box of the shape. |
| 3 | Specifies the fill color gradient of the shape is in radial mode from the center of the shape. |
| 4 | Specifies the fill color gradient of the shape is in radial mode from the center of the bottom edge of the shape. |
| 5 | Specifies the fill color gradient of the shape is in radial mode from the center of the top edge of the shape. |
| 6 | Specifies the fill color gradient of the shape is in radial mode from the top right corner of the bounding box of the shape. |
| 7 | Specifies the fill color gradient of the shape is in radial mode from the top left corner of the bounding box of the shape. |
| 8 | Specifies the fill color gradient of the shape is in rectangle mode from the bottom right corner of the bounding box of the shape. |
| 9 | Specifies the fill color gradient of the shape is in rectangle mode from the bottom left corner of the bounding box of the shape. |
| 10 | Specifies the fill color gradient of the shape is in rectangle mode from the center of the shape. |
| 11 | Specifies the fill color gradient of the shape is in rectangle mode from the top right corner of the bounding box of the shape. |
| 12 | Specifies the fill color gradient of the shape is in rectangle mode from the top left corner of the bounding box of the shape. |

#### FillGradientEnabled

The **FillGradientEnabled** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the fill color gradient is visible. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### FillPattern

The **FillPattern** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the fill pattern property of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

It MUST have a value from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies a transparent fill. |
| 1 | Specifies a solid fill color. |
| 2 | Fill 2. Upward slanting lines |
| 3 | Fill 3. Grid |
| 4 | Fill 4. Diamond |
| 5 | Fill 5. Downward slanting lines |
| 6 | Fill 6. Horizontal lines |
| 7 | Fill 7. Vertical lines |
| 8 | Fill 8. 80% greyscale, dotted 80% |
| 9 | Fill 9. 70% greyscale, dotted 70% |
| 10 | Fill 10. 30% greyscale, dotted 30% |
| 11 | Fill 11. 20% greyscale, dotted 20% |
| 12 | Fill 12. 10% greyscale, dotted 10% |
| 13 | Fill 13. Small horizontal lines |
| 14 | Fill 14. Small vertical lines |
| 15 | Fill 15. Small downward slanting lines |
| 16 | Fill 16. Small upward slanting lines |
| 17 | Fill 17. Small checker board |
| 18 | Fill 18. Small dots |
| 19 | Fill 19. Thin small horizontal lines |
| 20 | Fill 20. Thin, small vertical lines |
| 21 | Fill 21. Thin, small downward angled lines |
| 22 | Fill 22. Thin, small upward slanting lines |
| 23 | Fill 23. Small grid |
| 24 | Fill 24. Small diamonds |
| 25 | Fill 25. Gradient. Dark on left to light on right |
| 26 | Fill 26. Gradient. Dark in center, fading to light on left and right |
| 27 | Fill 27. Gradient. Dark on right fading to light on left. |
| 28 | Fill 28. Gradient. Dark on top fading to light on bottom |
| 29 | Fill 29. Gradient. Dark in center fading to light on top and bottom |
| 30 | Fill 30. Gradient. Dark on bottom fading to light on top |
| 31 | Fill 31. Gradient. Dark in upper left fading to light on right. |
| 32 | Fill 32. Gradient. Dark in upper right fading to light on left. |
| 33 | Fill 33. Gradient. Dark lower left fading to light on right |
| 34 | Fill 34. Gradient. Dark lower right fading to light on left. |
| 35 | Fill 35. Gradient. Dark in center spreading out in triangular pattern towards corners. |
| 36 | Fill 36. Circular gradient. Dark in upper left fading to light in lower right |
| 37 | Fill 37. Circular gradient. Dark in upper right fading to light in lower left |
| 38 | Fill 38. Circular gradient. Dark in lower left fading to light in upper right |
| 39 | Fill 39. Circular gradient. Dark in lower right fading to light in upper left |
| 40 | Fill 40. Circular gradient. Dark center fading out to light |
| 254 | Use the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) that is specified by the formula associated with this cell for the fill pattern. |

#### Flags

The **Flags** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the direction [text property](#Section_949ea5ce9d7d4a16b51e9587ea795eab) of a [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of zero specifies that the text direction is left to right; a value of one specifies that the text direction is right to left. Other values are used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### FlipX

The **FlipX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies whether the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of a [shape](#Section_2995871af1b144e69754989fb760ee18) has an inverted x-axis. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

The value of the structure MUST be equal to zero or one. A value of one specifies that the axis is inverted; a value of zero specifies that the axis is not inverted.

#### FlipY

The **FlipY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies whether the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of a [shape](#Section_2995871af1b144e69754989fb760ee18) has an inverted y-axis. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

The value of the structure MUST be equal to zero or one. A value of one specifies that the axis is inverted; a value of zero specifies that the axis is not inverted.

#### FlyoutChild

The **FlyoutChild** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Font

The **Font** cell is a [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) structure that specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) used for the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### FontScale

The **FontScale** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2) width of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be greater than or equal to zero and less than or equal to six. The value is normalized such that a value of 1 corresponds to 100 percent and the value of 6 corresponds to 600 percent.

#### FontSchemeIndex

The **FontSchemeIndex** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the font scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is equal to 0, font is specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9).

If the value of the **V** attribute is equal to 65534, the index of the font scheme dynamic theme component of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **FontSchemeIndex** Cell\_Type descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

#### Format

The **Format** cell is a [vFormatString](#Section_ff39e94802a4435596e662456c2a775f) structure that specifies the [data formatting](#Section_3f3139d589804752b7f0542ed7c687cb) to apply to a [text field](#Section_511cd5d9640846e4b16b42d513a07558) or [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) value. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) or [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The formatting to apply is based on the type of the Row\_Type element specified by a sibling [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element with an **N** attribute equal to "Type".

#### Frame

The **Frame** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Gamma

The **Gamma** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the [**gamma correction**](#gt_60eaec33-bd4f-4e71-93e6-4ef382aa80f9) applied to an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element. When the value of the structure is equal to one, no correction is applied.

#### GlowColor

The **GlowColor** cell is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type that specifies the color of a [glow effect set](#Section_2c4ed8d832594420b5c152f17716d44f) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### GlowColorTrans

The **GlowColorTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the transparency of the color of a [glow effect set](#Section_2c4ed8d832594420b5c152f17716d44f) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies there is no transparency; a value of one specifies maximum transparency.

#### GlowSize

The **GlowSize** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the thickness of a [glow effect set](#Section_2c4ed8d832594420b5c152f17716d44f) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value MUST be greater than or equal to zero points and less than or equal to 150 points.

#### Glue

The **Glue** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### GlueType

The **GlueType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### GradientStopColor

The **GradientStopColor** cell is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type that specifies the color of a gradient stop of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) Section\_Type parent element.

#### GradientStopColorTrans

The **GradientStopColorTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the transparency of the color of a gradient stop of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) Section\_Type parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies there is no transparency; a value of one specifies maximum transparency.

#### GradientStopPosition

The **GradientStopPosition** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the position of a gradient stop of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) [Section\_Type](#Section_735b599d1359476785931c508a885779) or [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) Section\_Type parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies a gradient stop at the starting point of the gradient; a value of one specifies a gradient stop at the ending point of the gradient.

The gradient starting and ending points are specified by [FillGradientDir](#Section_e19c498a52774add99538b85cb2af250) or [LineGradientDir](#Section_7e14c089e4914335899f45549724854e) and [FillGradientAngle](#Section_0ed91a89215241c4a2636821e3fa77ff) or [LineGradientAngle](#Section_0c7abcd3bc604fb6839140bb63100aac) and [UseGroupGradient](#Section_1a823cd4cf594248b78486e06430c3b4) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements. The value of the structure MUST be greater than or equal to the value of preceding GradientStopPosition structures in the same section.

#### Height

The **Height** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### HelpTopic

The **HelpTopic** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element with an **ID** attribute equal to zero.

#### HideForApply

The **HideForApply** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### HideText

The **HideText** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies whether the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of the [shape](#Section_2995871af1b144e69754989fb760ee18) is displayed. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be equal to zero or one. A value of one specifies that the text is not displayed; a value of zero specifies that the text is displayed.

#### HorzAlign

The **HorzAlign** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the horizontal alignment [text properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab) of a [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the paragraph is left aligned. |
| 1 | Specifies that the paragraph is centered. |
| 2 | Specifies that the paragraph is right aligned. |
| 3 | Specifies that the paragraph is justified. |
| 4 | Specifies that the paragraph is distributed. |

#### ImgHeight

The **ImgHeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### ImgOffsetX

The **ImgOffsetX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the horizontal offset of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### ImgOffsetY

The **ImgOffsetY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the vertical offset of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### ImgWidth

The **ImgWidth** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the width of an image. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### IndFirst

The **IndFirst** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the distance that the first line of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in each paragraph of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) is indented from the left edge of the paragraph. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the indentation position is located outside the boundary of the shape’s text block, the closest position on the boundary of the shape’s text block MUST be used in its place.

#### IndLeft

The **IndLeft** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the distance that all lines of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in a paragraph are indented from the left margin of the [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the indentation position is located outside the boundary of the shape’s text block, the closest position within the boundary of the shape’s text block MUST be used in its place.

#### IndRight

The **IndRight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the distance that all lines of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in a paragraph are indented from the right margin of the [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the indentation position is located outside the boundary of the shape’s text block, the closest position within the boundary of the shape’s text block MUST be used in its place.

If the indentation is greater than the width of the shape less the cell value of [IndLeft](#Section_9c08d34ba26142b6a5b720d92ec79bbb), the text is positioned based on the IndLeft value.

#### InhibitSnap

The **InhibitSnap** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Initials

The **Initials** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Reviewer](#Section_a46803c1647d4a23abe5aa7f07bb02b0) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Invisible

The **Invisible** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether a hyperlink or [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) item is invisible on a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) or [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A structure value of one specifies that the item is invisible; a structure value of zero specifies that the item is visible.

#### IsDropSource

The **IsDropSource** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### IsDropTarget

The **IsDropTarget** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### IsSnapTarget

The **IsSnapTarget** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### IsTextEditTarget

The **IsTextEditTarget** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### KeepTextFlat

The **KeepTextFlat** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether 3D rotation properties (section [2.2.7.3.7](#Section_46d31e14551941d18e7b25c18480a570)) apply to the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of one specifies that [2.2.7.3D rotation properties](#Section_eef94b47f838406e8de5203e0204794a) do not apply to the shape text; a value of zero specifies that 3D rotation properties apply to the shape text.

#### Label

The **Label** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies the label of a [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### LangID

The **LangID** cell is a [vLanguageString](#Section_f91b1356cff14c718a04247007cbe4c9) structure that specifies the locale settings to use for [character properties](#Section_c5dd283696ad47959dc458db5ab84015) and [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab), as specified in [[RFC4646]](https://go.microsoft.com/fwlink/?LinkId=123591) and [[RFC4647]](https://go.microsoft.com/fwlink/?LinkId=113490). It MUST have either a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) or [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### LayerMember

The **LayerMember** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies a [layer](#Section_4a598344a53a40d89e994077ee09d069) index list to which a [shape](#Section_2995871af1b144e69754989fb760ee18) is assigned. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element with an **ID** attribute equal to zero.

A layer index list is a semicolon-delimited collection of layer indices defined by the following.

**ABNF**

1. layer-index-list = [layer-index \*(";" layer-index)]
2. layer-index = 1\*DIGIT

#### LeftMargin

The **LeftMargin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the margin between the left border of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) and the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) it contains. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Letterspace

The **Letterspace** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the amount of space added or subtracted between characters in a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### LineAdjustFrom

The **LineAdjustFrom** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineAdjustTo

The **LineAdjustTo** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineCap

The **LineCap** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the line end style for a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Rounded |
| 1 | Square |
| 2 | Extended |

#### LineColor

The **LineColor** cell is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type that specifies the line color of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LineColorTrans

The **LineColorTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the transparency of the line color of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies that the image is completely opaque; a value of one specifies that the image is completely transparent.

#### LineGradientAngle

The **LineGradientAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the orientation of the line color gradient of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of zero corresponds to the direction of the positive x-axis. If the sibling [FillGradientDir](#Section_e19c498a52774add99538b85cb2af250) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element is not equal to zero, this value MUST be ignored.

#### LineGradientDir

The **LineGradientDir** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the type of the line color gradient of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies a linear line color gradient. |
| 1 | Specifies the line color gradient of the shape is in radial mode from the bottom right corner of the bounding box of the shape. |
| 2 | Specifies the line color gradient of the shape is in radial mode from bottom left corner of the bounding box of the shape. |
| 3 | Specifies the line color gradient of the shape is in radial mode from center of the shape. |
| 4 | Specifies the line color gradient of the shape is in radial mode from the center of the bottom edge of the shape. |
| 5 | Specifies the line color gradient of the shape is in radial mode from the center of the top edge of the shape. |
| 6 | Specifies the line color gradient of the shape is in radial mode from top right corner of the bounding box of the shape. |
| 7 | Specifies the line color gradient of the shape is in radial mode from top left corner of the bounding box of the shape. |
| 8 | Specifies the line color gradient of the shape is in rectangle mode from bottom right corner of the bounding box of the shape. |
| 9 | Specifies the line color gradient of the shape is in rectangle mode from bottom left corner of the bounding box of the shape. |
| 10 | Specifies the line color gradient of the shape is in rectangle mode from center of the shape. |
| 11 | Specifies the line color gradient of the shape is in rectangle mode from top right corner of the bounding box of the shape. |
| 12 | Specifies the line color gradient of the shape is in rectangle mode from top left corner of the bounding box of the shape. |

#### LineGradientEnabled

The **LineGradientEnabled** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the line gradient is visible. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LineJumpCode

The **LineJumpCode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineJumpFactorX

The **LineJumpFactorX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineJumpFactorY

The **LineJumpFactorY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineJumpStyle

The **LineJumpStyle** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LinePattern

The **LinePattern** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the line pattern of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies transparent line. |
| 1 | Specifies a solid line. |
| 2 | Line 2. Dashed |
| 3 | Line 3. Dotted |
| 4 | Line 4. Dash dot pattern |
| 5 | Line 5. Dash dot dot pattern |
| 6 | Line 6. Dot dash dash pattern |
| 7 | Line 7. Long dash, short dash pattern |
| 8 | Line 8. Short dash, short dash, long dash pattern |
| 9 | Line 9. Short dash |
| 10 | Line 10. Dotted with small spaces |
| 11 | Line 11. Short dash, dot pattern |
| 12 | Line 12. Short dash, dot, dot pattern |
| 13 | Line 13. Dot, short dash, short dash pattern |
| 14 | Line 14. Short dash, long dash pattern |
| 15 | Line 15. Long dash, short dash, short dash pattern |
| 16 | Line 16. Long dashed with big spaces |
| 17 | Line 17. Dotted with big spaces |
| 18 | Line 18. Dot, big space, dash, big space pattern |
| 19 | Line 19. Dot, big space, Dot, Big space, Dash big space pattern |
| 20 | Line 10. Dot, big space, dash, big space, dash, big space pattern |
| 21 | Line 21. Long dash, big space, short dash, big space pattern |
| 22 | Line 22. Long dash, big space, dash, big space, dash, big space pattern |
| 23 | Line 23. Tiny dashed |
| 254 | Use the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) that is specified by the formula associated with this cell for the line pattern. |

#### LineRouteExt

The **LineRouteExt** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineToLineX

The **LineToLineX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineToLineY

The **LineToLineY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineToNodeX

The **LineToNodeX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineToNodeY

The **LineToNodeY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### LineWeight

The **LineWeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the line thickness of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element. It MUST be greater than zero.

#### LocalizeMerge

The **LocalizeMerge** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Lock

The **Lock** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [shapes](#Section_2995871af1b144e69754989fb760ee18) in a [layer](#Section_4a598344a53a40d89e994077ee09d069) are [selectable](#Section_0a5a7ac088504e078c3cfeb4db36dcc7). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the shapes in this layer are not selectable; a value of zero specifies the shapes in this layer can be selected.

#### LockAspect

The **LockAspect** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockBegin

The **LockBegin** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockCalcWH

The **LockCalcWH** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockCrop

The **LockCrop** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockCustProp

The **LockCustProp** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockDelete

The **LockDelete** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockEnd

The **LockEnd** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockFormat

The **LockFormat** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockFromGroupFormat

The **LockFromGroupFormat** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockGroup

The **LockGroup** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockHeight

The **LockHeight** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockMoveX

The **LockMoveX** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockMoveY

The **LockMoveY** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockPreview

The **LockPreview** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### LockReplace

The **LockReplace** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockRotate

The **LockRotate** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockSelect

The **LockSelect** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether a [shape](#Section_2995871af1b144e69754989fb760ee18) is [selectable](#Section_0a5a7ac088504e078c3cfeb4db36dcc7). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element. If the [ProtectShapes\_Type](#Section_6ece27ddbe624c67b0f657eaee881e1d) element in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) has a value equal to zero, it is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

A value of one specifies that the shape is not selectable; a value of zero specifies the shape is selectable.

#### LockTextEdit

The **LockTextEdit** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockThemeColors

The **LockThemeColors** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockThemeConnectors

The **LockThemeConnectors** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockThemeEffects

The **LockThemeEffects** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockThemeFonts

The **LockThemeFonts** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockThemeIndex

The **LockThemeIndex** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockVariation

The **LockVariation** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockVtxEdit

The **LockVtxEdit** is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LockWidth

The **LockWidth** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### LocPinX

The **LocPinX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate of the center of rotation of a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### LocPinY

The **LocPinY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the y-coordinate of the center of rotation of a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Menu

The **Menu** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Name

The **Name** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element or a Row\_Type parent element that has a [Reviewer](#Section_a46803c1647d4a23abe5aa7f07bb02b0) Section\_Type parent element.

#### NameUniv

The **NameUniv** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### NewWindow

The **NewWindow** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### NoAlignBox

The **NoAlignBox** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### NoCoauth

The **NoCoauth** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### NoCtlHandles

The **NoCtlHandles** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### NoFill

The **NoFill** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether [fill properties](#Section_52745b68d28443b9a8f0564732579b99) are applied to a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). It MUST have a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that fill properties are not applied to the geometric path; a value of zero specifies that fill properties are applied to the geometric path.

#### NoLine

The **NoLine** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) are applied to a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). It MUST have a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that line properties are not applied to the geometric path; a value of zero specifies that line properties are applied to the geometric path.

#### NoLiveDynamics

The **NoLiveDynamics** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### NonPrinting

The **NonPrinting** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### NoObjHandles

The **NoObjHandles** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### NoProofing

The **NoProofing** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### NoQuickDrag

The **NoQuickDrag** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### NoShow

The **NoShow** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether a [geometric path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) is visible. It MUST have a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the geometric path is hidden; a value of zero specifies that the geometric path is visible.

#### NoSnap

The **NoSnap** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### ObjectKind

The **ObjectKind** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the direction of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) for a [text field](#Section_511cd5d9640846e4b16b42d513a07558). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the text field direction matches the text direction. |
| 1 | Specifies that the text field direction is horizontal. |

#### ObjType

The **ObjType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### OnPage

The **OnPage** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### OutputFormat

The **OutputFormat** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### Overline

The **Overline** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) has an over line [character property](#Section_c5dd283696ad47959dc458db5ab84015). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the text run has an over line; a value of zero specifies that the text run does not have an over line.

#### PageBottomMargin

The **PageBottomMargin** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageHeight

The **PageHeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element. The value of the structure MUST be greater than zero.

#### PageLeftMargin

The **PageLeftMargin** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageLineJumpDirX

The **PageLineJumpDirX** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageLineJumpDirY

The **PageLineJumpDirY** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageLockDuplicate

The **PageLockDuplicate** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageLockReplace

The **PageLockReplace** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageRightMargin

The **PageRightMargin** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageScale

The **PageScale** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies a unit of distance used to define the [scale](#Section_a607b6836eed4a8480753cd045758142) of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

The default value of the structure is one inch.

#### PageShapeSplit

The **PageShapeSplit** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PagesX

The **PagesX** cell is a [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PagesY

The **PagesY** cell is a [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageTopMargin

The **PageTopMargin** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PageWidth

The **PageWidth** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the width of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

The value of the structure MUST be greater than zero.

#### PaperKind

The **PaperKind** cell is a [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PaperSource

The **PaperSource** cell is a [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Perspective

The **Perspective** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) or [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the angle of view for a [shape](#Section_2995871af1b144e69754989fb760ee18) with 3D rotation properties (section [2.2.7.3.7](#Section_46d31e14551941d18e7b25c18480a570)). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

If the cell is a vScalar, the value of the structure MUST be expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e) custom internal unit number. The value of the structure MUST be greater than or equal to zero, and less than or equal to 120 degrees. The value of zero specifies that the perspective projection is not applied.

If the sibling **RotationType** (section [2.4.4.294](#Section_de4f428ac2f845c6b9a417a2218653a5)) **Cell\_Type** (section [2.3.4.2.5](#Section_6f23bcc4af934023a3803e78a228e166)) element does not have a value of two, this value MUST be zero.

#### PinX

The **PinX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate of the center of rotation of a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape’s [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### PinY

The **PinY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the y-coordinate of the center of rotation of a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape’s [parent](#Section_901ceba559e64aba90342042efc1d354). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### PlaceDepth

The **PlaceDepth** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PlaceFlip

The **PlaceFlip** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PlaceStyle

The **PlaceStyle** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PlowCode

The **PlowCode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Pos

The **Pos** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the position [character properties](#Section_c5dd283696ad47959dc458db5ab84015) used to format a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the position of the text run is unchanged. |
| 1 | Specifies that the text run is displayed as superscript. |
| 2 | Specifies that the text run is displayed as subscript. |

#### Position

The **Position** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the tab stop position for a [tabs property](#Section_7ae7864a00ec483d9391508c764ba856). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Tabs](#Section_1ebf938deeb2454486090feeb086cf2c) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element. The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18) and relative to the edge of the shape’s [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). It MUST have an **N** attribute with the following format.

Position*#*

Where *#* is an unsigned long integer, and MUST be less than or equal to 59.

#### PreviewQuality

The **PreviewQuality** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### PreviewScope

The **PreviewScope** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### Print

The **Print** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### PrintGrid

The **PrintGrid** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### PrintPageOrientation

The **PrintPageOrientation** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Prompt

The **Prompt** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have either a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element, a Row\_Type parent element that has a [Control](#Section_b41c74816cdc48db9ae346d652f65e14) Section\_Type parent element, a Row\_Type parent element that has a [Property](#Section_0489948cf7944ce3a3929525e6865bec) Section\_Type parent element, or a Row\_Type parent element that has a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) Section\_Type parent element.

#### QuickStyleEffectsMatrix

The **QuickStyleEffectsMatrix** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the effects matrix quick style slice as specified in section [2.2.7.4.3](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to 0, and less than or equal to 103.

If the value of the structure is greater than or equal to 1 and less than or equal to 6, the set of [effect properties](#Section_eef94b47f838406e8de5203e0204794a) is specified by a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) for the [ShdwForegndTrans](#Section_7d07c7a152f3491ba133c5ef2dcd051c), [ShdwPattern](#Section_4bcd0eaf60c84710b955a5fd7158b860), [ShapeShdwType](#Section_2130e5954335461a8a75528ad207cab9), [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259), [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2), [ShapeShdwObliqueAngle](#Section_169b07fe9c0f403284df725ea631f73f), [ShapeShdwScaleFactor](#Section_1d6cff997a864e8db19d2c1829e2f282), [ShapeShdwBlur](#Section_da304ad0e12b4225a95e36572c787c7b), [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0), [BevelTopWidth](#Section_903a8d7c15a14efa9e8d68933d64e7de), [BevelTopHeight](#Section_0614ed0e76a7400a955dff1766769c54), [BevelContourColor](#Section_02cefb0379404adf9d2c670e8b1932c1), [BevelContourSize](#Section_a362bb43b6ea48f09f48b4224a44b211), [BevelMaterialType](#Section_339e96d50bd946d39a3054b93adb3457), [BevelLightingType](#Section_f34790153f9c43b1a7106b55e2c79f83), [BevelLightingAngle](#Section_aca57aa548b7464eaba5a44ea5d370a1), [ReflectionTrans](#Section_54ac8196234b463e8ea84646d5044cb0), [ReflectionDist](#Section_dd2a36036ffb47f98f47c6cf866f069d), [ReflectionSize](#Section_25ae2a5a2f2f40adb59af410000414d7), [ReflectionBlur](#Section_3a1cfddd550e410c953802bd092d7114), [SketchEnabled](#Section_a434c9a2c2e3478b95b97a5170331148), [SketchSeed](#Section_84bf006a52754948a90d5e25320c80b4), [SketchAmount](#Section_ef519b3920ed481c87572ca63854a67b), [SketchLineWeight](#Section_f413e8f6ad9e41e4b2f916ab32cd14c1), [SketchLineChange](#Section_a0005aaa67814606995746b07d65972c), [SketchFillChange](#Section_2990c30ac2b7492d89c6f4184f344739), [GlowColor](#Section_a8ef555afe054a6083827ce580f49202), [GlowColorTrans](#Section_0a7e9d86f52143f0b8a1d86a41ff33b0), [GlowSize](#Section_acb99b53189d4d65a92f7239171c2f0b), and [SoftEdgesSize](#Section_768a404663c742cf8f3d11f85a275235) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

If the value of the structure is equal to 0, the set of effect properties is specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9) for the ShdwForegndTrans, ShdwPattern, ShapeShdwType, ShapeShdwOffsetX, ShapeShdwOffsetY, ShapeShdwObliqueAngle, ShapeShdwScaleFactor, ShapeShdwBlur, BevelTopType, BevelTopWidth, BevelTopHeight, BevelContourColor, BevelContourSize, BevelMaterialType, BevelLightingType, BevelLightingAngle, ReflectionTrans, ReflectionDist, ReflectionSize, ReflectionBlur, SketchEnabled, SketchSeed, SketchAmount, SketchLineWeight, SketchLineChange, SketchFillChange, GlowColor, GlowColorTrans, GlowSize, and SoftEdgesSize Cell\_Type elements.

If the value of the structure is greater than or equal to 100 and less than or equal to 103, the set of effect properties specified by a dynamic theme is derived by evaluation of the value of the structure. The following table specifies the meaning of each value.

| Value of the structure | Evaluation |
| --- | --- |
| 100 | The set of effect properties specified by a dynamic theme is specified by the **effectIdx** attribute specified by the first [CT\_VarStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) child element of a [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) element specified by the [VariationStyleIndex](#Section_60a354271d64466aa9cf35e12a05d760) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18). |
| 101 | The set of effect properties specified by a dynamic theme is specified by the **effectIdx** attribute specified by the second CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 102 | The set of effect properties specified by a dynamic theme is specified by the **effectIdx** attribute specified by the third CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 103 | The set of effect properties specified by a dynamic theme is specified by the **effectIdx** attribute specified by the fourth CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |

#### QuickStyleFillColor

The **QuickStyleFillColor** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the fill color [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure specifies a color from the color scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) for the [FillForegnd](#Section_50d71b31d16e42739b9da19e2dfa6e09) and [FillBkgnd](#Section_8c3d69f7de4a47bea209e25e69ea785a) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements, and the [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc) Cell\_Type child element of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the **dk1** color from the color scheme dynamic theme component as specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065)section 20.1.4.1.9 is used. |
| 1 | Specifies that the **lt1** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.22 is used. |
| 2 | Specifies that the **accent1** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.1 is used. |
| 3 | Specifies that the **accent2** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.2 is used. |
| 4 | Specifies that the **accent3** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.3 is used. |
| 5 | Specifies that the **accent4** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.4 is used. |
| 6 | Specifies that the **accent5** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.5 is used. |
| 7 | Specifies that the **accent6** color from the color scheme dynamic theme component as specified in [ISO/IEC29500-1:2016]section 20.1.4.1.6 is used. |
| 8 | Specifies that the background color from the color scheme dynamic theme component is used. |
| 100 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a [CT\_VariationClrScheme](#Section_2607c298d88146179138cb89177a37cf) element specified by the [VariationColorIndex](#Section_9c1ff24f6cee4bf5ba8d5b065a1b589c) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18) is used. |
| 101 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VariationClrScheme element specified by the VariationColorIndex Cell\_Type element of a shape is used. |
| 102 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VariationClrScheme element specified by the VariationColorIndex Cell\_Type element of a shape is used. |
| 103 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VariationClrScheme element specified by the VariationColorIndex Cell\_Type element of a shape is used. |
| 104 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VariationClrScheme element specified by the VariationColorIndex Cell\_Type element of a shape is used. |
| 105 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VariationClrScheme element specified by the VariationColorIndex Cell\_Type element of a shape is used. |
| 106 | Specifies that the color property specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section A.2 child element of a CT\_VariationClrScheme element specified by the VariationColorIndex Cell\_Type element of a shape is used. |

#### QuickStyleFillMatrix

The **QuickStyleFillMatrix** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the fill matrix [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to 0, and less than or equal to 103.

If the value of the structure is greater than or equal to 1 and less than or equal to 6, the set of [fill properties](#Section_52745b68d28443b9a8f0564732579b99) is specified by a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) for the [FillForegndTrans](#Section_444b828fd3da4f06b7ec6c0387ca2a3a), [FillBkgndTrans](#Section_9d6512e0dca049f6afc6df12931c8fc8), [FillPattern](#Section_1cd3d15cff2842118c41844affbe30ed), [FillGradientDir](#Section_e19c498a52774add99538b85cb2af250), [FillGradientAngle](#Section_0ed91a89215241c4a2636821e3fa77ff), [FillGradientEnabled](#Section_ea4b40d27ffc4d1d8801757265752543), [RotateGradientWithShape](#Section_1d24b5af4cf44513a40617ad4895c292), [UseGroupGradient](#Section_1a823cd4cf594248b78486e06430c3b4)  [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements, and the [ColorTrans](#Section_4b03b138a65641b4bc0d6028359096cf) and [Position](#Section_9bddfa2824e74b6a86d70a44aac68de1) Cell\_Type child elements of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is equal to 0, the set of fill properties is specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9) for the cells belonging to the FillForegndTrans, FillBkgndTrans, FillPattern, FillGradientDir, FillGradientAngle, FillGradientEnabled, RotateGradientWithShape, UseGroupGradient Cell\_Type elements, and the ColorTrans and Position Cell\_Type child elements of a Row\_Type that has a FillGradient Section\_Type parent element.

If the value of the structure is greater than or equal to 100 and less than or equal to 103, the set of fill properties specified by a dynamic theme is derived by evaluation of the value of the structure. The following table specifies the meaning of each value.

| Value of the structure | Evaluation |
| --- | --- |
| 100 | The set of fill properties specified by a dynamic theme is specified by the **fillIdx** attribute specified by the first [CT\_VarStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) child element of a [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) element specified by the [VariationStyleIndex](#Section_60a354271d64466aa9cf35e12a05d760) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18). |
| 101 | The set of fill properties specified by a dynamic theme is specified by the **fillIdx** attribute specified by the second CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 102 | The set of fill properties specified by a dynamic theme is specified by the **fillIdx** attribute specified by the third CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 103 | The set of fill properties specified by a dynamic theme is specified by the **fillIdx** attribute specified by the fourth CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |

#### QuickStyleFontColor

The **QuickStyleFontColor** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the font color [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure specifies a color from the color scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) for the [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be specified by the table in [QuickStyleFillColor](#Section_723529ce4ac3416db7be362aa28be341) cell.

#### QuickStyleFontMatrix

The **QuickStyleFontMatrix** [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the font matrix [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to 0, and less than or equal to 103.

If the value of the structure is greater than or equal to 1 and less than or equal to 6, the set of Fonts is specified by a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) for the cells belonging to the [Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5), [AsianFont](#Section_18e2f228bed14e60b64eb2517e657c13), [ComplexScriptFont](#Section_51cdec724a7644a292617ea906fd32b4), and [Style](#Section_a87e85eecf764e0ba09e638c871c28e2) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child elements of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is equal to 0, the set of fonts is specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9) for the cells belonging to the Font, AsianFont, ComplexScriptFont, and Style Cell\_Type child elements of a Row\_Type that has a Character Section\_Type parent element.

If the value of the structure is greater than or equal to 100 and less than or equal to 103, the set of fonts specified by a dynamic theme is derived by evaluation of the value of the structure. The following table specifies the meaning of each value.

| Value of the structure | Evaluation |
| --- | --- |
| 100 | The set of fonts specified by a dynamic theme is specified by the **fontIdx** attribute specified by the first [CT\_VarStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) child element of a [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) element specified by the [VariationStyleIndex](#Section_60a354271d64466aa9cf35e12a05d760) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18). |
| 101 | The set of fonts specified by a dynamic theme is specified by the **fontIdx** attribute specified by the second CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 102 | The set of fonts specified by a dynamic theme is specified by the **fontIdx** attribute specified by the third CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 103 | The set of fonts specified by a dynamic theme is specified by the **fontIdx** attribute specified by the fourth CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |

#### QuickStyleLineColor

The **QuickStyleLineColor** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the line color [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure specifies a color from the color scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) for the [LineColor](#Section_1ad2684e7fc94cb2857979c3107099f2) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) and the [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc) Cell\_Type child element of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be specified by the table in [QuickStyleFillColor](#Section_723529ce4ac3416db7be362aa28be341) cell.

#### QuickStyleLineMatrix

The **QuickStyleLineMatrix** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the line matrix [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to 0, and less than or equal to 103.

If the value of the structure is greater than or equal to 1 and less than or equal to 6, the set of [line properties](#Section_999c6bb7a4f94aadb299d18418fa0ec9) is specified by a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) for the [LinePattern](#Section_f718c50060664fcc8b664bb5015f133f), [LineWeight](#Section_358e71950fb34e338b39b801d79d84a0), [LineCap](#Section_b08a8361c0c14d5f89156810bcedfbc3), [BeginArrow](#Section_8f7d58be20e0433b841959add0650616), [EndArrow](#Section_d1e61c8bf576429da425447b39935496), [LineColorTrans](#Section_8d14aed205d146a5a3ce7f65c4837773), [CompoundType](#Section_fcd4d7f70582471dbf20a9fdea902696), [BeginArrowSize](#Section_9ea88ec87a3e4ea69caaa823f50f0707), [EndArrowSize](#Section_c6eef25a120041e5b838f9211941a34f), [Rounding](#Section_378bccccbf8446e8a63a0f9881f84ac2), [LineGradientDir](#Section_7e14c089e4914335899f45549724854e), [LineGradientAngle](#Section_0c7abcd3bc604fb6839140bb63100aac), and [LineGradientEnabled](#Section_c02f26b3c37d4fdca4272999c81c08d9) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements and the [ColorTrans](#Section_4b03b138a65641b4bc0d6028359096cf) and [Position](#Section_9bddfa2824e74b6a86d70a44aac68de1) Cell\_Type child elements of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) that has a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is equal to 0, the set of line properties is specified by the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9) for the LinePattern, LineWeight, LineCap, BeginArrow, EndArrow, LineColorTrans, CompoundType, BeginArrowSize, EndArrowSize, Rounding, LineGradientDir, LineGradientAngle, and LineGradientEnabled Cell\_Type elements and the ColorTrans and Position Cell\_Type child elements of a Row\_Type that has a LineGradient Section\_Type parent element.

If the value of the structure is greater than or equal to 100 and less than or equal to 103, the set of line properties specified by a dynamic theme is derived by evaluation of the value of the structure. The following table specifies the meaning of each value.

| Value of the structure | Evaluation |
| --- | --- |
| 100 | The set of line properties specified by a dynamic theme is specified by the **lineIdx** attribute specified by the first [CT\_VarStyle](#Section_07c6a18a16ec4c36942b8c611dd3d140) child element of a [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) element specified by the [VariationStyleIndex](#Section_60a354271d64466aa9cf35e12a05d760) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18). |
| 101 | The set of line properties specified by a dynamic theme is specified by the **lineIdx** attribute specified by the second CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 102 | The set of line properties specified by a dynamic theme is specified by the **lineIdx** attribute specified by the third CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |
| 103 | The set of line properties specified by a dynamic theme is specified by the **lineIdx** attribute specified by the fourth CT\_VarStyle child element of a CT\_VariationStyleScheme element specified by the VariationStyleIndex Cell\_Type element of a shape. |

#### QuickStyleShadowColor

The **QuickStyleShadowColor** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the index of the [shadow](#Section_6f369fe25fef4a579dd620a73fec534d) color [quick style slice](#Section_f9af4781844f4b14b4b615e5b3c3319e). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure specifies a color from the color scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) for the [ShdwForegnd](#Section_16a4f382fe564f9f9d15415eb076612d) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166).

The value of the structure MUST be specified by the table in [QuickStyleFillColor](#Section_723529ce4ac3416db7be362aa28be341) cell.

#### QuickStyleType

The **QuickStyleType** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies whether the [QuickStyleLineMatrix](#Section_edfd9f33fea34bf58cd5a91a3d677b03), [QuickStyleFillMatrix](#Section_25689058b1e74d3ca8330a4c7180f5f2), and [QuickStyleEffectsMatrix](#Section_92238d7b5ecc48ed8f2f5dc577a4a11c) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements of a shape (section [2.2.3](#Section_2995871af1b144e69754989fb760ee18)), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style refer to the effect scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26) or the connector scheme dynamic theme component regardless of whether the shape, master, or style is a [connector](#Section_21a8f47c40324f1c912c1476cba071c0). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the QuickStyleLineMatrix, QuickStyleFillMatrix, and QuickStyleEffectsMatrix Cell\_Type elements refer to an effect scheme dynamic theme component if the shape, master, or style is a non-connector, or to a connector scheme dynamic theme component if the shape, master, or style is a connector. |
| 1 and 2 | Specifies that the QuickStyleLineMatrix, QuickStyleFillMatrix, and QuickStyleEffectsMatrix Cell\_Type elements refer to an effect scheme dynamic theme component regardless if the shape, master, or style is a connector. |
| 3 | Specifies that the QuickStyleLineMatrix, QuickStyleFillMatrix, and QuickStyleEffectsMatrix Cell\_Type elements refer to a connector scheme dynamic theme component regardless if the shape, master, or style is a connector. |

#### QuickStyleVariation

The QuickStyleVariation cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that can affect formula evaluation of the [ThemeVal](#Section_7f01db8e32d540df966f70cc1eeb9225) function token. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be a bitwise OR combination of one or more of the values from the following table.

| Value | Meaning |
| --- | --- |
| 0x0 | Specifies no effect on formula evaluation of the ThemeVal function token. |
| 0x1 | Specifies no effect on formula evaluation of the ThemeVal function token. |
| 0x2 | Specifies that formula evaluation of the "TextColor" [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26) **ThemeProperty** argument for the ThemeVal function token is affected as follows.  If the absolute difference in luminance in [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5) between the formula evaluation of the "BackgroundColor" and "TextColor" vDynamicThemeString **ThemeProperty** arguments for the ThemeVal function token is greater than or equal to 16.66%, then formula evaluation of the "TextColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is not affected.  Otherwise, if the luminance of the formula evaluation of the "BackgroundColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is less than or equal to 72.92%, then formula evaluation of the "TextColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token MUST return a color equal to RGB(255, 255, 255); otherwise it MUST return the color with the largest absolute difference in luminance from the formula evaluation of the "TextColor", "FillColor", and "LineColor" vDynamicThemeString **ThemeProperty** arguments for the ThemeVal function token. |
| 0x4 | Specifies that formula evaluation of the "LineColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is affected as follows.  If the absolute difference in luminance in hue-saturation-luminance (HSL) color space between the formula evaluation of the "BackgroundColor" and "LineColor" vDynamicThemeString **ThemeProperty** arguments for the ThemeVal function token is greater than or equal to 16.66%, then formula evaluation of the "LineColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is not affected.  Otherwise, if the luminance of the formula evaluation of the "BackgroundColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is less than or equal to 72.92%, then formula evaluation of the "LineColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token MUST return a color equal to RGB(255, 255, 255); otherwise it MUST return the color with the largest absolute difference in luminance from the formula evaluation of the "FillColor" and "LineColor" vDynamicThemeString **ThemeProperty** arguments for the ThemeVal function token. |
| 0x8 | Specifies that formula evaluation of the "FillColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token can be affected.  If the absolute difference in luminance in hue-saturation-luminance (HSL) color space between the formula evaluation of the "BackgroundColor" and "FillColor" vDynamicThemeString **ThemeProperty** arguments for the ThemeVal function token is greater than or equal to 16.66%, then formula evaluation of the "FillColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is not affected.  Otherwise, if the luminance of the formula evaluation of the "BackgroundColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token is less than or equal to 72.92%, then formula evaluation of the "FillColor" vDynamicThemeString **ThemeProperty** argument for the ThemeVal function token MUST return a color equal to RGB(255, 255, 255); otherwise it MUST return the color with the largest absolute difference in luminance from the formula evaluation of the "FillColor" and "LineColor" vDynamicThemeString **ThemeProperty** arguments for the ThemeVal function token. |

#### ReadOnly

The **ReadOnly** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### ReflectionBlur

The **ReflectionBlur** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the amount of blur of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [reflection](#Section_d64550c8b2524a05a5261e1ffeb981ed). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to zero, and less than or equal to (100.0 / 72.0) inches. The value of zero specifies that there is no blur.

#### ReflectionDist

The **ReflectionDist** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the distance that the [reflection](#Section_d64550c8b2524a05a5261e1ffeb981ed) is offset from a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to zero, and less than or equal to (100.0 / 72.0) inches.

#### ReflectionSize

The **ReflectionSize** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the percentage of the [reflection](#Section_d64550c8b2524a05a5261e1ffeb981ed) size relative to a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent.

#### ReflectionTrans

The **ReflectionTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the [reflection](#Section_d64550c8b2524a05a5261e1ffeb981ed) transparency of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage, and MUST be greater than or equal to zero and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent.

#### Relationships

The **Relationships** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ReplaceCopyCells

The **ReplaceCopyCells** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ReplaceLockFormat

The **ReplaceLockFormat** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element with an **ID** attribute equal to zero.

#### ReplaceLockShapeData

The **ReplaceLockShapeData** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element with an **ID** attribute equal to zero.

#### ReplaceLockText

The **ReplaceLockText** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element with an **ID** attribute equal to zero.

#### ResizeMode

The **ResizeMode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### ResizePage

The **ResizePage** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### ReviewerID

The **ReviewerID** cell is a [PtgShort](#Section_f7b9155c4ceb4742bdf4db90e2d5220c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Reviewer](#Section_a46803c1647d4a23abe5aa7f07bb02b0) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### RightMargin

The **RightMargin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the margin between the right border of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) and the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) it contains. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### RotateGradientWithShape

The **RotateGradientWithShape** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the orientation of the [fill color gradient](#Section_52745b68d28443b9a8f0564732579b99) property rotates along with the rotation of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of one specifies that the orientation of the fill color gradient property rotates along with the rotation of the shape; a value of zero specifies that the orientation of the fill color gradient property does not rotate along with the rotation of the shape.

#### RotationType

The **RotationType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the type of projection of the effect properties of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies no 3D effects rotation. |
| 1 | Specifies that a parallel projection is applied to the 3D effect properties. |
| 2 | Specifies that the shape rotates in perspective projection. |
| 3 | Specifies that the shape rotates in oblique projection from the top left corner of the bounding box of the shape. |
| 4 | Specifies that the shape rotates oblique projection from the top right corner of the bounding box of the shape. |
| 5 | Specifies that the shape rotates oblique projection from the bottom left corner of the bounding box of the shape. |
| 6 | Specifies that the shape rotates oblique projection from the bottom right corner of the bounding box of the shape. |

#### RotationXAngle

The **RotationXAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the counterclockwise rotation angle of a [shape](#Section_2995871af1b144e69754989fb760ee18) around the y-axis. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### RotationYAngle

The **RotationYAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the counterclockwise rotation angle of a [shape](#Section_2995871af1b144e69754989fb760ee18) around the x-axis. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### RotationZAngle

The **RotationZAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the counterclockwise rotation angle of a [shape](#Section_2995871af1b144e69754989fb760ee18) around the z-axis. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Rounding

The **Rounding** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the rounding radius of the outline of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to zero inches. The value of zero specifies that there is no rounding. A value greater than zero specifies that any corner between two line segments, a line segment and an elliptical arc, or two elliptical arcs within the outline is rounded with a radius equal to the value.

#### RouteStyle

The **RouteStyle** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### ScaleX

The **ScaleX** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element. It MUST be greater than zero.

#### ScaleY

The **ScaleY** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element. It MUST be greater than zero.

#### SelectMode

The **SelectMode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies information about the [selection](#Section_0a5a7ac088504e078c3cfeb4db36dcc7) behavior of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the [subshapes](#Section_00285724289547c19f2f489ec5da125c) of the shape are not selectable. |
| 1 | Specifies that the subshapes of the shape are selectable if other conditions for shape selection hold. |
| 2 | Specifies that the subshapes of the shape are selectable if other conditions for shape selection hold. |

#### ShapeFixedCode

The **ShapeFixedCode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapeKeywords

The **ShapeKeywords** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapePermeablePlace

The **ShapePermeablePlace** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapePermeableX

The **ShapePermeableX** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapePermeableY

The **ShapePermeableY** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapePlaceFlip

The **ShapePlaceFlip** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapePlaceStyle

The **ShapePlaceStyle** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapePlowCode

The **ShapePlowCode** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapeRouteStyle

The **ShapeRouteStyle** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapeShdwBlur

The **ShapeShdwBlur** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the blur of a [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a ShapeSheet\_Type or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to zero, and equal or less than (100.0 / 72.0) points.

#### ShapeShdwObliqueAngle

The **ShapeShdwObliqueAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping that specifies the angle of direction of an oblique [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e) custom internal unit number. A value of zero in this cell specifies that the angle direction is straight up and is measured moving clockwise.

#### ShapeShdwOffsetX

The **ShapeShdwOffsetX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate value of the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) on a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The [shadow distance](#Section_089d8d2665474452a18422004c1e089f) specified by this cell and the [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2) cell MUST be greater than or equal to zero, and equal or less than (200.0 / 72.0) inches.

#### ShapeShdwOffsetY

The **ShapeShdwOffsetY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the vertical value of the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) on a [shape](#Section_2995871af1b144e69754989fb760ee18). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The [shadow distance](#Section_089d8d2665474452a18422004c1e089f) specified by this cell and the [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259) cell MUST be greater than or equal to zero, and equal or less than (200.0 / 72.0) inches.

#### ShapeShdwScaleFactor

The **ShapeShdwScaleFactor** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the percentage by which the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [shape](#Section_2995871af1b144e69754989fb760ee18) can be enlarged or reduced. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to two. The value is normalized such that a value of 2 corresponds to 200 percent. As the value of the structure increases, the shadow is enlarged.

#### ShapeShdwShow

The **ShapeShdwShow** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies whether the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [shape](#Section_2995871af1b144e69754989fb760ee18) will be displayed. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the shadow effect set is displayed only if the shape has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779). |
| 1 | Specifies that the shadow effect set is displayed only if the shape has a Geometry Section\_Type and the shape is a [top-level shape](#Section_a662815dc0c445eb8c722f12f1e28088). |
| 2 | Specifies that the shadow effect set is displayed. |

#### ShapeShdwType

The **ShapeShdwType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) type of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the [page default shadow](#Section_a1b70455097f4cf9bfc3f3b09a7174f5) is used for the shadow effect set. |
| 1 | Specifies a simple shadow. |
| 2 | Specifies an oblique shadow. |
| 3 | Specifies an inner shadow. |

#### ShapeSplit

The **ShapeSplit** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShapeSplittable

The **ShapeSplittable** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Sharpen

The **Sharpen** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the degree to which the contrast of adjacent pixels is increased to increase the sharpness of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no increase in sharpness; a value of one specifies the maximum increase in sharpness.

#### ShdwForegnd

The **ShdwForegnd** cell is a [vColor](#Section_6953a98a0e984d3e9fe95484589a4695) custom input type that specifies the color used for the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ShdwForegndTrans

The **ShdwForegndTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the color transparency level used for the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure is specified by the [ColorTrans](#Section_4b03b138a65641b4bc0d6028359096cf) cell.

#### ShdwObliqueAngle

The **ShdwObliqueAngle** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the angle of oblique direction when the [page default shadow](#Section_a1b70455097f4cf9bfc3f3b09a7174f5) is applied. It MUST have a [PageSheet\_Type](#Section_63494c43b4cd4a0c93ef16620eb13da7) parent element.

The angle specified in this cell is used whenever a [shape](#Section_2995871af1b144e69754989fb760ee18) specifies a page default shadow.

The value of the structure MUST be expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e) custom internal unit number. A value of zero specifies that the angle direction is straight up and is measured moving clockwise.

To set the behavior for an individual shape, use the [ShapeShdwObliqueAngle](#Section_169b07fe9c0f403284df725ea631f73f) cell.

#### ShdwOffsetX

The **ShdwOffsetX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the horizontal offset of a [page sheet’s](#Section_63494c43b4cd4a0c93ef16620eb13da7) [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a PageSheet\_Type parent element.

The [shadow distance](#Section_089d8d2665474452a18422004c1e089f) specified by this cell and the [ShdwOffsetY](#Section_5835fe653c33455c8ac855af7da45f48) cell MUST be greater than or equal to zero, and equal or less than (200.0 / 72.0) inches.

The value specified in **ShdwOffsetX** is used whenever a shape specifies a [page default shadow](#Section_a1b70455097f4cf9bfc3f3b09a7174f5).

To set the behavior for an individual shape, use the [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259) cell.

#### ShdwOffsetY

The **ShdwOffsetY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the vertical offset of a [page sheet’s](#Section_63494c43b4cd4a0c93ef16620eb13da7) [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a PageSheet\_Type parent element.

The [shadow distance](#Section_089d8d2665474452a18422004c1e089f) specified by this cell and the [ShdwOffsetX](#Section_d5df1f51922a418995ba4a4bfa7631b6) cell MUST be greater than or equal to zero, and equal or less than (200.0 / 72.0) inches.

The value specified in **ShdwOffsetY** is used whenever a shape specifies a [page default shadow](#Section_a1b70455097f4cf9bfc3f3b09a7174f5).

To set the behavior for an individual shape, use the [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2) cell.

#### ShdwPattern

The **ShdwPattern** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies whether the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) is visible or not for a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be equal to zero or one. The value of one specifies that the shadow is visible, while the value of zero specifies that the shadow is not visible.

#### ShdwScaleFactor

The **ShdwScaleFactor** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the normalized percentage by which the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) of a [page sheet](#Section_63494c43b4cd4a0c93ef16620eb13da7) can be enlarged or reduced. It MUST have a PageSheet\_Type parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to two. The value is normalized such that a value of 2 corresponds to 200 percent. As the value of the structure increases, the shadow is enlarged.

The value specified in **ShdwScaleFactor** is used whenever a [shape](#Section_2995871af1b144e69754989fb760ee18) specifies a [page default shadow](#Section_a1b70455097f4cf9bfc3f3b09a7174f5).

To set the behavior for an individual shape, use the [ShapeShdwScaleFactor](#Section_1d6cff997a864e8db19d2c1829e2f282) cell.

#### ShdwType

The **ShdwType** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies the [shadow effect set](#Section_6f369fe25fef4a579dd620a73fec534d) type of a [page sheet](#Section_63494c43b4cd4a0c93ef16620eb13da7). It MUST have a PageSheet\_Type parent element.

The value specified in this cell is used whenever a [shape](#Section_2995871af1b144e69754989fb760ee18) specifies a [page default shadow](#Section_a1b70455097f4cf9bfc3f3b09a7174f5).

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 1 | Specifies a simple shadow. |
| 2 | Specifies an oblique shadow. |
| 3 | Specifies an inner shadow. |

To set the behavior for an individual shape, use the [ShapeShdwType](#Section_2130e5954335461a8a75528ad207cab9) cell.

#### Size

The **Size** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the font size of a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### SketchAmount

The **SketchAmount** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies the number of points, distributed uniformly across each path segment of a [shape](#Section_2995871af1b144e69754989fb760ee18), where perturbations are performed for [sketch effect](#Section_a26dd56967ed4c30a435191752e08e9a). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

This cell MUST have a value greater than or equal to zero, and less than or equal to 25, with a default value of five.

#### SketchEnabled

The **SketchEnabled** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether [sketch effect](#Section_a26dd56967ed4c30a435191752e08e9a) is applied to a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of zero specifies that the sibling cells [SketchAmount](#Section_ef519b3920ed481c87572ca63854a67b), [SketchFillChange](#Section_2990c30ac2b7492d89c6f4184f344739), [SketchLineChange](#Section_a0005aaa67814606995746b07d65972c), [SketchLineWeight](#Section_f413e8f6ad9e41e4b2f916ab32cd14c1), and [SketchSeed](#Section_84bf006a52754948a90d5e25320c80b4) MUST be ignored. The default value is zero.

#### SketchFillChange

The **SketchFillChange** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the amplitude of the fill perturbations for [sketch effect](#Section_a26dd56967ed4c30a435191752e08e9a). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no perturbation to the fill; a value of one specifies the maximum perturbation to the fill.

#### SketchLineChange

The **SketchLineChange** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the amplitude of the path perturbations for [sketch effect](#Section_a26dd56967ed4c30a435191752e08e9a). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies no perturbation to the path; a value of one specifies the maximum perturbation to the path.

#### SketchLineWeight

The **SketchLineWeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the additional line thickness to add to each path segment for [sketch effect](#Section_a26dd56967ed4c30a435191752e08e9a). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value MUST be greater than or equal to zero points, and less than or equal to 50 points. Its default value is three points.

#### SketchSeed

The **SketchSeed** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies a seed assigned to a [shape](#Section_2995871af1b144e69754989fb760ee18) for [sketch effect](#Section_a26dd56967ed4c30a435191752e08e9a). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value MUST have a value greater than or equal to zero, and less than or equal to 65535, with a default value of zero.

#### Snap

The **Snap** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### SoftEdgesSize

The **SoftEdgesSize** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the size of the soft edge in the [effect properties](#Section_eef94b47f838406e8de5203e0204794a) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to zero, and less than or equal to (100.0 / 72.0) inches. The value of zero specifies the shape doesn’t have soft edges.

#### SortKey

The **SortKey** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have either a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element, a Row\_Type parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) Section\_Type parent element, or a Row\_Type parent element that has a [Property](#Section_0489948cf7944ce3a3929525e6865bec) Section\_Type parent element.

#### SpAfter

The **SpAfter** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies an amount of space inserted after each paragraph in the [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18) except for the last paragraph. Other [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab) can specify additional amounts of space. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### SpBefore

The **SpBefore** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies an amount of space inserted before each paragraph in the [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18) except for the first paragraph. Other [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab) can specify additional amounts of space. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### SpLine

The **SpLine** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of a line of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in the [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value of the structure is greater than or equal to zero, then the height of the line is equal to the value of the structure. If the value of the structure is less than zero, then the height of the line is equal to the absolute value of the structure multiplied by the largest font size of text in the line.

#### Status

The **Status** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### Strikethru

The **Strikethru** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553) has a strikethrough [character property](#Section_c5dd283696ad47959dc458db5ab84015). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the text run has a strikethrough; a value of zero specifies that the text run does not have a strikethrough.

#### Style

The **Style** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that specifies [character properties](#Section_c5dd283696ad47959dc458db5ab84015) used to format a [**text run**](#gt_393612a7-9552-48b0-abf6-0371dbd6d553). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the structure MUST be a bitwise OR combination of one or more of the values from the following table.

| Value | Meaning |
| --- | --- |
| 0x00 | Specifies that the text run is unformatted. |
| 0x01 | Specifies that the text run has a bold character property. |
| 0x02 | Specifies that the text run has an italic character property. |
| 0x04 | Specifies that the text run has an underline character property. |
| 0x08 | Specifies that the text run has a small caps character property. |

#### SubAddress

The **SubAddress** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that specifies a [**Uniform Resource Identifier (URI)**](#gt_e18af8e8-01d7-4f91-8a1e-0fb21b191f95) [**hyperlink location**](#gt_8b9cd56d-fa77-4360-a03f-9a2d5b5e0ff9). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

The value of the sibling [Address](#Section_a0ac651f8574449484fc76e3749d1354) Cell\_Type element determines the meaning of this value. If the value of Address Cell\_Type element is empty, this value specifies the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) name and an optional [shape](#Section_2995871af1b144e69754989fb760ee18) name for the current [web Drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) referenced by the [hyperlink](#Section_908fb9630f114c19b100fedb1f768c67). If the value of the Address Cell\_Type element is an [**HTTP**](#gt_d72f1494-4917-4e9e-a9fd-b8f1b2758dcd) URI, as described in [[RFC2616]](https://go.microsoft.com/fwlink/?LinkId=90372), this value specifies the hyperlink location. Otherwise, this value is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

If the value of Address Cell\_Type element is empty, the value of the structure is defined by the following:

**ABNF**

1. value = page-name ["/" shape-name]
2. page-name = [string-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)
3. shape-name = string-value

Where string-value is an ABNF formula, specified in section 2.5.1.

#### TagName

The **TagName** cell is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element with an [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element or a Row\_Type parent element with an [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) Section\_Type parent element.

#### TextBkgnd

The **TextBkgnd** cell is a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token that specifies the background color of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### TextBkgndTrans

The **TextBkgndTrans** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the level of transparency of the background color of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies that the background is completely opaque; a value of one specifies that the background is completely transparent.

#### TextDirection

The **TextDirection** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the orientation of characters in a text block. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be zero or one. A value of zero specifies that the orientation is horizontal; a value of one specifies that the orientation is vertical.

#### TextPosAfterBullet

The **TextPosAfterBullet** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the distance from the beginning of the bullet and the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) after the bullet in each bulleted item of a [paragraph](#Section_5a21eaa240b145729d02208da043da0a). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a Paragraph [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

If the value is less than or equal to zero, 0.25 inch is used as the distance from the beginning of the bullet and the text after the bullet; if the value is less than the width of the bullet, there is no distance between the bullet and the text after the bullet.

#### TheData

The **TheData** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### ThemeIndex

The **ThemeIndex** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies the index of the primary scheme [dynamic theme component](#Section_cd5bb66b7f2f49b5a6309ae976bbdb26). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the **V** attribute is equal to 65534, the index of the primary scheme dynamic theme component of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **ThemeIndex** [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

#### TheText

The **TheText** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### TopMargin

The **TopMargin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the margin between the top border of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) and the first line of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) it contains. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Transparency

The **Transparency** cell is a [vScalar](#Section_53aa08d870b047449a94608d01487e40) custom token grouping that specifies the level of transparency of an [image](#Section_c7915a6e1cd84633ad57261c2da081ae). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be expressed as a percentage. It MUST be greater than or equal to zero, and less than or equal to one. The value is normalized such that a value of 1 corresponds to 100 percent. A value of zero specifies that the image is completely opaque; a value of one specifies that the image is completely transparent.

#### TxtAngle

The **TxtAngle** cell is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) or [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the angle of rotation of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element. If **TxtAngle** is a vScalar, the value of the structure MUST be expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e) custom internal unit number. Increasing numbers indicate counterclockwise rotation.

#### TxtHeight

The **TxtHeight** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the height of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element. It MUST be greater than or equal to zero.

#### TxtLocPinX

The **TxtLocPinX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate of the center of rotation of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the text block. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### TxtLocPinY

The **TxtLocPinY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the y-coordinate of the center of rotation of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the text block. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### TxtPinX

The **TxtPinX** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the x-coordinate of the center of rotation of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### TxtPinY

The **TxtPinY** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the y-coordinate of the center of rotation of a [shape’s](#Section_2995871af1b144e69754989fb760ee18) [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). The value is defined in relation to the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### TxtWidth

The **TxtWidth** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the width of a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element. It MUST be greater than or equal to zero.

#### Type

The **Type** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the type of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element. It MUST have a Row\_Type parent element that has a [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) [Section\_Type](#Section_735b599d1359476785931c508a885779), [Field](#Section_179d1cf155b54c86b7db1baa772d3068) Section\_Type, or [Property](#Section_0489948cf7944ce3a3929525e6865bec) Section\_Type parent element.

If the cell is a descendant of a Property Section\_Type parent element, it specifies a type of [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a) stored in a sibling [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element. The value of the structure MUST be specified by a [vDataType](#Section_36ab75e38cec42c2a46a009dfd8c21b2) structure. If the cell is a descendant of a Field or Connection Section\_Type parent element, it is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### UICat

The **UICat** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### UICod

The **UICod** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### UIFmt

The **UIFmt** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### UIVisibility

The **UIVisibility** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies the visibility of a [page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

A value of one specifies that the page is not visible; a value of zero specifies the page is visible.

#### UpdateAlignBox

The **UpdateAlignBox** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### UseGroupGradient

The **UseGroupGradient** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether a [subshape](#Section_00285724289547c19f2f489ec5da125c) uses the gradient starting and ending points of its [parent shape](#Section_901ceba559e64aba90342042efc1d354) for fill gradient. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

A value of one specifies that the subshape uses the gradient starting and ending points of its parent shape for fill gradient; a value of zero specifies that the subshape uses its own gradient starting and ending points for fill gradient. If the [shape](#Section_2995871af1b144e69754989fb760ee18) is not a subshape, the token is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### Value

The **Value** cell is a [vAny](#Section_4a97b6616cca49a7911670b57c9379d2) custom token grouping that specifies the value of a [shape data](#Section_89012d8abbf44af08c31a22e6eb61f2a), [text field](#Section_511cd5d9640846e4b16b42d513a07558), or user-defined cell. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has either a [Field](#Section_179d1cf155b54c86b7db1baa772d3068) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element, a Row\_Type parent element that has a [Property](#Section_0489948cf7944ce3a3929525e6865bec) Section\_Type parent element, or a Row\_Type that has a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) Section\_Type parent element.

#### VariationColorIndex

The **VariationColorIndex** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies the index of the color scheme list of a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the **V** attribute is equal to 65534, the index into the color scheme list of a dynamic theme variant of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **VariationColorIndex** [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

The value of the **V** attribute specifies which of the four color scheme lists of a dynamic theme variant in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) is used for evaluation in the [QuickStyleLineColor](#Section_0e75e2f9a6ad4e4797453f5d132688fe), [QuickStyleFillColor](#Section_723529ce4ac3416db7be362aa28be341), [QuickStyleShadowColor](#Section_3b9cd611489e4632bd5ec8d0aeb2b044), and [QuickStyleFontColor](#Section_9ea47e333be3453980c1a70ac0d4d768) Cell\_Type elements of a shape. The following table specifies which color scheme list of a dynamic theme variant is used.

| Value of V attribute | Color scheme list of a dynamic theme variant |
| --- | --- |
| 0 | Color scheme list specified by the first [CT\_VariationClrScheme](#Section_2607c298d88146179138cb89177a37cf) child element of a [CT\_VariationClrSchemeLst](#Section_031d022c328840d4a3e9679a6e6a927b) child element of a [CT\_OfficeStyleSheet](#Section_5c86236387dc41d490d0a892bf545fdf) element in a [Theme\_XML\_Part](#Section_24711011cb574f6d8de85b95ac64f40a). |
| 1 | Color scheme list specified by the second CT\_VariationClrScheme child element of a CT\_VariationClrSchemeLst child element of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| 2 | Color scheme list specified by third CT\_VariationClrScheme child element of a CT\_VariationClrSchemeLst child element of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| 3 | Color scheme list specified by the fourth CT\_VariationClrScheme child element of a CT\_VariationClrSchemeLst child element of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |

#### VariationStyleIndex

The **VariationStyleIndex** cell is a [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) parse token that specifies the index of the style scheme list of a [dynamic theme variant](#Section_79aed9f85d10403891067d1927fa0575). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the **V** attribute MUST be greater than or equal to 0 and less than or equal to 65534.

If the value of the **V** attribute is equal to 65534, the index into the color scheme list of a dynamic theme variant of a [shape](#Section_2995871af1b144e69754989fb760ee18) is specified by the **V** attribute of the **VariationStyleIndex** [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) descendant element of the [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) element containing the shape.

The value of the **V** attribute specifies which of the four style scheme lists of a dynamic theme variant in a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) is used for evaluation in the [QuickStyleLineMatrix](#Section_edfd9f33fea34bf58cd5a91a3d677b03), [QuickStyleFillMatrix](#Section_25689058b1e74d3ca8330a4c7180f5f2), [QuickStyleEffectsMatrix](#Section_92238d7b5ecc48ed8f2f5dc577a4a11c), and [QuickStyleFontMatrix](#Section_14da1dc4afde4cc58670956687bc8c14) Cell\_Type elements of a shape. The following table specifies which style scheme of a dynamic theme variant is used.

| Value of V attribute | Style scheme list of a dynamic theme variant |
| --- | --- |
| 0 | Style scheme list specified by the first [CT\_VariationStyleScheme](#Section_35c6c126f3be43b2ab0a485259651c3a) child element of a [CT\_VariationStyleSchemeLst](#Section_5bec143bb68248aa89c8d9545b604624) child element of a [CT\_OfficeStyleSheet](#Section_5c86236387dc41d490d0a892bf545fdf) element in a [Theme\_XML\_Part](#Section_24711011cb574f6d8de85b95ac64f40a). |
| 1 | Style scheme list specified by the second CT\_VariationStyleScheme child element of a CT\_VariationStyleSchemeLst child element of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| 2 | Style scheme list specified by the third CT\_VariationStyleScheme child element of a CT\_VariationStyleSchemeLst child element of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |
| 3 | Style scheme list specified by the fourth CT\_VariationStyleScheme child element of a CT\_VariationStyleSchemeLst child element of a CT\_OfficeStyleSheet element in a Theme\_XML\_Part. |

#### Verify

The **Verify** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Property](#Section_0489948cf7944ce3a3929525e6865bec) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### VerticalAlign

The **VerticalAlign** cell is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping that specifies the vertical alignment of [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) within a [text block](#Section_cdd2ca31e1764bd88b46f3ad594fc96b). It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

The value of the structure MUST be greater than or equal to zero, and less than or equal to 255.

The value of the structure MUST be from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Top |
| 1 | Middle |
| 2 | Bottom |
| 3, or greater | Top |

#### ViewMarkup

The **ViewMarkup** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### Visible

The **Visible** cell is a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that specifies whether the [shapes](#Section_2995871af1b144e69754989fb760ee18) in a [layer](#Section_4a598344a53a40d89e994077ee09d069) are visible. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

A value of one specifies that the shapes in this layer are visible; a value of zero specifies the shapes in this layer are hidden.

#### WalkPreference

The **WalkPreference** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element or a [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) parent element.

#### Width

The **Width** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that specifies the width of the shape. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### X

The **X** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) or [vScalar](#Section_53aa08d870b047449a94608d01487e40) custom token grouping that specifies the x-coordinate of a point in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779), [Control](#Section_b41c74816cdc48db9ae346d652f65e14) Section\_Type, [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) Section\_Type, [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) Section\_Type, or [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) Section\_Type parent element.

If it is a child element of a Row\_Type element that has a Geometry Section\_Type parent, it specifies the x-coordinate of a vertex in a [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). If it has an [ArcTo](#Section_ba9a42aba66841c9b4165fa04698f719), [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d), [EllipticalArcTo](#Section_c02155d1394e47448723d474f6ec82e2), [InfiniteLine](#Section_aa836815e431444aa88e64450e7c5348), [LineTo](#Section_8a289a3e4dc14e90b005f6f0242768fa), [MoveTo](#Section_c8d4bbc71acd4f058f8ef6cd21a85651), [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a), [PolyLineTo](#Section_fbee463785994947990565fd8fbf6481), [SplineKnot](#Section_2d9eb38c23c44bf59bd6b58b64fc5d2f), or [SplineStart](#Section_bf648f0d5fcd477e99e3da60d7bdbea8) Row\_Type parent element, the cell is a vLength. If it has a [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), [RelLineTo](#Section_ee800037097e410babc2ee1a3d9a9876), [RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8), or [RelQuadBezTo](#Section_5ef65107af0d4883a080f721fab64b8d) parent element, the cell is a vScalar.

If it is a child element of a Row\_Type element that has a Control, Scratch, ActionTag, or Connection Section\_Type parent, **X** is a vLength that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### XCon

The **XCon** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element with a [Control](#Section_b41c74816cdc48db9ae346d652f65e14) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### XDyn

The **XDyn** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Control](#Section_b41c74816cdc48db9ae346d652f65e14) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### XGridDensity

The **XGridDensity** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### XGridOrigin

The **XGridOrigin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### XGridSpacing

The **XGridSpacing** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### XJustify

The **XJustify** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### XRulerDensity

The **XRulerDensity** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### XRulerOrigin

The **XRulerOrigin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### Y

The **Y** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) or [vScalar](#Section_53aa08d870b047449a94608d01487e40) custom token grouping that specifies the y-coordinate of a point in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of a [shape](#Section_2995871af1b144e69754989fb760ee18). It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779), [Control](#Section_b41c74816cdc48db9ae346d652f65e14) Section\_Type, [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) Section\_Type, [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) Section\_Type, or [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) Section\_Type parent element.

If it is a child element of a Row\_Type element that has a Geometry Section\_Type parent, the cell specifies the y-coordinate of a vertex in a [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb). If it has an [ArcTo](#Section_ba9a42aba66841c9b4165fa04698f719), [Ellipse](#Section_6a237f5585cd4b10a1f6325df559fe9d), [EllipticalArcTo](#Section_c02155d1394e47448723d474f6ec82e2), [InfiniteLine](#Section_aa836815e431444aa88e64450e7c5348), [LineTo](#Section_8a289a3e4dc14e90b005f6f0242768fa), [MoveTo](#Section_c8d4bbc71acd4f058f8ef6cd21a85651), [NURBSTo](#Section_b6a3beeb34e348e69cf4b74cf646149a), [PolyLineTo](#Section_fbee463785994947990565fd8fbf6481), [SplineKnot](#Section_2d9eb38c23c44bf59bd6b58b64fc5d2f), or [SplineStart](#Section_bf648f0d5fcd477e99e3da60d7bdbea8) Row\_Type parent element, the cell is a vLength. If it has a [RelCubBezTo](#Section_fe4ffa27e91f49a98b1a358692bb9e19), [RelEllipticalArcTo](#Section_254aba031384449db563e62b6b809229), [RelLineTo](#Section_ee800037097e410babc2ee1a3d9a9876), [RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8), or [RelQuadBezTo](#Section_5ef65107af0d4883a080f721fab64b8d) parent element, the cell is a vScalar.

If Y is a child element of a Row\_Type element that has a Control, Scratch, ActionTag, or Connection Section\_Type parent, it is a vLength that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only.

#### YCon

The **YCon** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Control](#Section_b41c74816cdc48db9ae346d652f65e14) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### YDyn

The **YDyn** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has a [Control](#Section_b41c74816cdc48db9ae346d652f65e14) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### YGridDensity

The **YGridDensity** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### YGridOrigin

The **YGridOrigin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### YGridSpacing

The **YGridSpacing** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### YJustify

The **YJustify** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) parent element that has an [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### YRulerDensity

The **YRulerDensity** cell is a [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) parse token that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### YRulerOrigin

The **YRulerOrigin** cell is a [vLength](#Section_f809c3999b1c4a688984764d079d153c) custom token grouping that is used during [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) only. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

### Triggers

The **N** attribute of a [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element MUST be equal to one of the values defined in the following sections. The usage of the trigger is specified in the corresponding section.

#### CategoryChanged

The **CategoryChanged** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### Path

The **Path** trigger is unused and MUST be ignored. It MUST have a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element.

#### RecalcBkgPageName

The **RecalcBkgPageName** trigger is unused and MUST be ignored. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### RecalcColor

The **RecalcColor** trigger is unused and MUST be ignored. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### RecalcCreateDT

The **RecalcCreateDT** trigger is unused and MUST be ignored. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### RecalcData1

The **RecalcData1** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### RecalcData2

The **RecalcData2** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### RecalcData3

The **RecalcData3** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### RecalcEditDT

The **RecalcEditDT** trigger specifies that the [DocLastEdit](#Section_504794ac13b347e1b5e0db60997eca53) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) exists on the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) specified by its [RefBy\_Type](#Section_8eff050eaedc4969bf45d6e9b83b0d39) child element. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element with an **N** attribute value of **RecalcEditDT** MUST exist if the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) contains a DocLastEdit function token, and a RefBy\_Type child element MUST exist for every drawing page in the web drawing that has a DocLastEdit function token.

#### RecalcID

The **RecalcID** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### RecalcMasterName

The **RecalcMasterName** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### RecalcName

The **RecalcName** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) parent element.

#### RecalcNowAndRand

The **RecalcNowAndRand** trigger specifies that the [Now](#Section_0aafebc34b2f4935a0c12c44d9ecbae5) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) exists on the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) specified by its [RefBy\_Type](#Section_8eff050eaedc4969bf45d6e9b83b0d39) child element. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element with an **N** attribute value of **RecalcNowAndRand** MUST be the child of every PageSheet\_Type element that specifies a drawing page that contains a Now function token.

#### RecalcPageCount

The **RecalcPageCount** trigger is unused and MUST be ignored. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

#### RecalcPageName

The **RecalcPageName** trigger is unused and MUST be ignored. It MUST have a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) or [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### RecalcPageNum

The **RecalcPageNum** trigger is unused and MUST be ignored. It MUST have a [PageSheet\_Type](#Section_f81673b1da844754b19ea0475d889120) parent element.

#### RecalcPath

The **RecalcPath** trigger specifies that the [Directory](#Section_e53d4962d1074da6bbabd6346b3cd8f1) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) exists on the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) specified by its [RefBy\_Type](#Section_8eff050eaedc4969bf45d6e9b83b0d39) child element. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element with an **N** attribute value of **RecalcPath** MUST exist if the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) contains a Directory function token, and a RefBy\_Type child element MUST exist for every drawing page in the web drawing that has a [DocLastSave](#Section_2c07a217f483446db74e78710a39debe) function token.

#### RecalcPrintDT

The **RecalcPrintDT** trigger is unused and MUST be ignored. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9)DocumentSheet\_Type (section 2.3.4.2.42) parent element.

#### RecalcSaveDT

The **RecalcSaveDT** trigger specifies that the [DocLastSave](#Section_2c07a217f483446db74e78710a39debe) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) [update trigger](#Section_6da736d6393340dd86acdbb1220170cd) exists on the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) specified by its [RefBy\_Type](#Section_8eff050eaedc4969bf45d6e9b83b0d39) child element. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element with an **N** attribute value of **RecalcSaveDT** MUST exist if the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) contains a DocLastSave function token, and a RefBy\_Type child element MUST exist for every drawing page in the web drawing that has a DocLastSave function token.

#### RecalcSummary

The **RecalcSummary** trigger specifies that at least one of the [Category](#Section_0ea08f1dc69740d58e2ce69312e26f77), [Creator](#Section_08ece44588164cefa3bf994c88bceca0), [Description](#Section_bc232ee0e33346a68a9abe1b2cedfe76), [Keywords](#Section_3b0df195b5804e9a91a7e1047b72910f), [Subject](#Section_6f5c323509474428ae584ae48c4ba6f9), or [Title](#Section_4ff8fdd26365487bac287126cb630839) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) [update triggers](#Section_6da736d6393340dd86acdbb1220170cd) exists on the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) specified by its [RefBy\_Type](#Section_8eff050eaedc4969bf45d6e9b83b0d39) child element. It MUST have a [DocumentSheet\_Type](#Section_d099c7366dfb4974ab266b95093ec9c9) parent element.

A [Trigger\_Type](#Section_a88a6dc01ca8439ab18dcceb57f40c4a) element with an **N** attribute value of **RecalcSummary** MUST exist if the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) contains at least one of the Category, Creator, Description, Keywords, Subject, or Title function tokens, and a RefBy\_Type child element MUST exist for every drawing page in the web drawing that has a Category, Creator, Description, Keywords, Subject, or Title function token.

#### RecalcType

The **RecalcType** trigger is unused and MUST be ignored. It MUST have a ShapeSheet\_Type (section [2.3.4.2.88](#Section_5d6be8d61cab4722ba32d73febc4e51d)) parent element.

#### RelChanged

The **RelChanged** trigger is unused and MUST be ignored. It MUST have a **ShapeSheet\_Type** (section [2.3.4.2.88](#Section_5d6be8d61cab4722ba32d73febc4e51d)) parent element.

#### ZOrderChanged

The **ZOrderChanged** trigger is unused and MUST be ignored. It MUST have a **PageSheet\_Type** (section [2.3.4.2.68](#Section_f81673b1da844754b19ea0475d889120)) parent element.

## Formula Expressions and Evaluation

This section specifies the syntax and semantics for [formula expressions](#Section_e715b9f4e36e402bb9625894c4ad7532).

### Formula ABNF and Full Grammar Definition

A [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) MUST conform to the following ABNF [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096) grammar.

1. val = func / token / ref
2. val /= "(" val ")" ; Enclose an expression in parens for higher precedence
3. func = [Abs](#Section_de1caf25cfd04f84b07182f4d80119a5) / [ACos](#Section_aff52110bee74fdc9f54d2e0602a6fc2) / [Add](#Section_7214059a9c084ed3a185d7a4acee8016) / [And](#Section_286beba8a1f54dbb84aea7951e79944b) / [Ang360](#Section_eae4a0004a604ca9b5bd73eafdc156ad) / [AngleToLoc](#Section_270e13a182514b188eec77cdb8318fb7) / [AngleToPar](#Section_dc6342a410da4f60a406e73a0e223996) / [ASin](#Section_0a941c0f2a1946c6ace0112360825605) / [ATan](#Section_5e49eee8ea7543d29bb6a48333dfeae2) / [ATan2](#Section_4b97d462d43b474095a450d46d183c24) / [BitAnd](#Section_11bf1f4b30e448ad813fd3750c928c2f) / [BitNot](#Section_13700d004fba432b850f079d734aceb1) / [BitOr](#Section_d5902f73befb43478ae391b1391af6e0) / [BitXor](#Section_c4c2c8d55f8242e991f77d8427af753d) / [BkgPageName](#Section_ffd631a7f57646e1a057d30d5f551ac8) / [Blend](#Section_9158d07336f24c4ea7cb5a8859b83800) / [Bound](#Section_eeb96ed68f3e474fadb5e497e1690748) / [Cat](#Section_25a98ccb3134489c91e9bc3593146095) / [Category](#Section_0ea08f1dc69740d58e2ce69312e26f77) / [Ceiling](#Section_8d61fd3b69fb42d78e0327d418e9367c) / [CellIsThemed](#Section_7c2c0bc34bd346b1b3688b2e907cda67) / [Char](#Section_333e69b5fbf84cbaa537d3cff1e58b3a) / [Company](#Section_6d00ac94274b4613908e812d04a4515f) / [Cos](#Section_d21c5fedafb54f118f4a0b20953a0641) / [CosH](#Section_2a282ab1d43142c08d7a439b184d767f) / [Creator](#Section_08ece44588164cefa3bf994c88bceca0) / [CY](#Section_80ffe2efdd6e4f56a5e010f93c78ee22) / [Date](#Section_bdd53253fd9b496bbb28406768c8388c) / [DateTime](#Section_a792b810916a4fbabb767675d1818aea) / [DateValue](#Section_81aa96617015499b8c370895a5f76065) / [Day](#Section_487a4048230b48df8f62c5c49efc703a) / [DayOfYear](#Section_5ea6a7d6d90c49f5aae6c89872e67d33) / [Deg](#Section_d3fff50daba54c3ba362c9036793e2a5) / [DependsOn](#Section_4a2e2be1e90f47efbc484c6d39bdb938) / [Description](#Section_2f8c464eedcf40399b887e4be83077b9) / [Directory](#Section_e53d4962d1074da6bbabd6346b3cd8f1) / [Div](#Section_b5041cf5c8f64ae68a5484adefe92ea5) / [DocCreation](#Section_ef2fd7c945b8422995d9a9f8c4ee98fd) / [DocLastEdit](#Section_504794ac13b347e1b5e0db60997eca53) / [DocLastPrint](#Section_d53c055825584904b132b704300b449b) / [DocLastSave](#Section_2c07a217f483446db74e78710a39debe) / [EEQ](#Section_d20617d820be4fe2994257248484ab16) / [EGE](#Section_36c336c463724cacaf73b3f53818a803) / [EGT](#Section_f739ef9f07c94a9db979f49f86977b2f) / [ELE](#Section_fada1509d0224a95865965ac88c6d06e) / [ELT](#Section_ef785368ec0f4513a05d1ccefd7d674f) / [ENE](#Section_a50a1ac332404e36b5de968c8bd5beb2) / [FEQ](#Section_f505443520b44b46934c402f45ce9d34) / [FGE](#Section_11f98d222d4d47eea89f4293dfd4f8d4) / [FGT](#Section_80b6f2f92f5c4ad3a499dc3bd9bf2620) / [FieldPicture](#Section_9d4b1260b8074a9397c7f40bec839254) / [FileName](#Section_ccc46e08560c4aedb508c2a65d920277) / [Find](#Section_b3fd343f55934affbbc28cb7f30bdb07) / [FLE](#Section_a210058957e64e679f14bdbd51916a09) / [Floor](#Section_9a55aae38c1a426d89e6227d9c7df4f9) / [FLT](#Section_ce135996ace44c1bba49a56b0cdcd343) / [FNE](#Section_071f635730fc48ce9c9941f4ca1c1e9d) / [Format](#Section_7d448bd36e78408a855898e3e8f7a1b2) / [FormatEx](#Section_dc74e3e01fd4446fb3be2faae0302f52) / [FormulaExists](#Section_7b7345dc72004127b0f920a0d76b472a) / [Gravity](#Section_4bf49fdb32f84d9e8e4ff4af76a2ea0c) / [Guard](#Section_1bc6f67f62b947fda85d8043f5fcb3db) / [HasCategory](#Section_601b043cc6c149e2b68505e4684ccd84) / [Hour](#Section_91374699b2204ce5b95c31786fd78b59) / [HSL](#Section_bad42784880e4824b03d7924f8c63cde) / [Hue](#Section_fb20ca3413b143ad9996e10008b86cf5) / [HueDiff](#Section_f88be40c02344c0f8bedb06784b6f2de) / [HyperlinkBase](#Section_43bab9bc3ef9432594d32ad7d5273efb) / [ID](#Section_e642b73baa8f4bba89cf12d8eaa7e15a) / [IF](#Section_878adfce2ecf4c70b07696deabfd44f3) / [IfError](#Section_774a75e82635452d9bd0e57b8eac38f3) / [Index](#Section_89e3fffae5b64e3aac4aaba1d9fa5095) / [Int](#Section_04cd2cf56ada4a29b2c4202a96c63bfb) / [IntersectX](#Section_0dd844cbd9204f7792e89100f90de848) / [IntersectY](#Section_c52a02b4bb514cfc8813d055b581356f) / [Intup](#Section_b7a6cc665bcf4d2f8f30895ea2cbd5d9) / [Is1D](#Section_2ade9be38b1b44ffab56b807960a9e8e) / [IsErr](#Section_3adc56e837f64fbcb5f51aa5cdfd602c) / [IsErrNA](#Section_be28b7b9cc854b11a4d841c24b637a2b) / [IsError](#Section_eaa5fccc91eb40dfb1ec249236426760) / [IsErrValue](#Section_14f8f99fb80046be928c6876ada43aba) / [IsThemed](#Section_76b00eb0fdfd4154829885cc75a3924e) / [Keywords](#Section_3b0df195b5804e9a91a7e1047b72910f) / [Language](#Section_a0d456393f0540e992da80e3a7eb7e35) / [Left](#Section_2c5b64df7fcc4f249eb1d0b8f6352fbc) / [Len](#Section_633ce182767f470d8e43c03a1f790c45) / [Ln](#Section_f0f0f1d977754c8dafec825740fcee46) / [Loc](#Section_63ebf35c85084bf98aff244baa07a5b9) / [LocalFormulaExists](#Section_C3DDDA4326814159AFC55CB37C96C386) / [LocToLoc](#Section_ffcf8a9b78294fc7a01719f3da6fb233) / [LocToPar](#Section_05b5044787864d23abdb7fe2f5ae7ee2) / [Log10](#Section_3e04dfe695404f93a62948140f889f6f) / [Lookup](#Section_0da80ca3da3648dcabb55e220f1bec11) / [Lower](#Section_44d9fb7cd4c7482dbae97817469fc982) / [Lum](#Section_0cfdabbbd7114c42bfd53a540ed5efd2) / [LumDiff](#Section_a89948040f784f409e300b5769c37e0c) / [Magnitude](#Section_06ef46f1476a4876891350b1caad94ab) / [Manager](#Section_957ba495588a447ea6354de2165e6ced) / [MasterName](#Section_d0151a5c30ce408e94b959f9ea5b7d15) / [Max](#Section_c2aa0ae2542b40628ce77ef43364a739) / [Mid](#Section_f90591d3e94a4bac82c7d2d1ca2f00d3) / [Min](#Section_90c6d3f8827b4120bbd6ed0cb4337700) / [Minute](#Section_bd3dca0fc80248f2b7a5056cef6cccff) / [Modulus](#Section_238ef9d48941441e9b184fc1a000bffe) / [Month](#Section_bf317a220fb44e6087e26e9c5d6119ed) / [MsoShade](#Section_f3cd3198e0ca449ea7946a6563c431cd) / [MsoTint](#Section_da64c377b5134139a76254998ef51ed5) / [Mul](#Section_b0301eb2acef4187900168f51276aa44) / [NA](#Section_919a3595dfb1406586d05932a9778ce0) / [Name](#Section_7fc3e9dc8bf94bd19098f537b3c7add9) / [Not](#Section_56e513065d564f48b8101de47266f40f) / [Now](#Section_0aafebc34b2f4935a0c12c44d9ecbae5) / [Nurbs](#Section_eecdfe10f361434ca5a827668bad6404) / [Or](#Section_7e7649a3959744bba80a94910d3e15de) / [PageCount](#Section_72e6269f3e2c4d20958decfe8084b725) / [PageName](#Section_0b008de4e2ca412a9a1a1008478074e6) / [PageNumber](#Section_7fb938242d4d426282c5d1d5aa057bbe) / [Par](#Section_e755a02255ed4de7b39a9e034eea834d) / [Pct](#Section_aa28cee0cfe84f1d84c624197f8a7064) / [Pi](#Section_4cf85926a2a247fb9f01eed19d1d4af0) / [Pnt](#Section_e634f457cf514dafaa225387dabaa9dc) / [Pntx](#Section_d85b45d0d22744b59a4d340b6792062e) / [PntY](#Section_007777496beb41589353a980b445ef28) / [PolyLine](#Section_b81ec59d54424f1d93b5931a65729ad4) / [Pow](#Section_8beecf8a9687439f82fcdf8431b3a113) / [Rad](#Section_edee6b6d3fc44bc49201ffd338389cb5) / [Rand](#Section_b3236297a6ac402d9d77ed5780d8f841) / [Ref](#Section_95a7fb9e6d4a46b1b0612adf1b44dd10) / [Replace](#Section_2e37faebb45f4bd4850d584fc0192c31) / [RGB](#Section_ab2b0f45fe1e40d797b409c1183a34cb) / [Right](#Section_ef9c1beb329c4467bab163afa1eb6a13) / [Round](#Section_b80b8b0e1f3a402d9e53c458ceae7fe4) / [Sat](#Section_fc9f0443bd7c457a8485056c42ccb976) / [SatDiff](#Section_99bb58b130c6455da890afd1cb6b169e) / [Second](#Section_efe145de6fa24bd1aeedc953c3f0f47b) / [SetAtRef](#Section_579d4837d5644e2dab2411ff86953557) / [SetAtRefEval](#Section_0920e3704cd04eb7906dca80c45e3cda) / [SetAtRefExpr](#Section_d211689cfe4b477884b749fffb56c11c) / [Shade](#Section_46c628269e814dc0a5d7b28ecf07e68f) / [ShapeText](#Section_bc4adf2fca25453da1a7c1d0c478ccb4) / [Sign](#Section_a0ad71eea6294f32af8d4ada7cc43153) / [Sin](#Section_b176ace2b48348a396e98aaee7de5fc4) / [SinH](#Section_314e786b8a7b44978bbc94f93a320670) / [Sqrt](#Section_3a41b128096f4e3c8345d8f13d931bf5) / [StrSame](#Section_f03062a17a094b4a88867b875ca50806) / [StrSameEx](#Section_8591a495a06a4d90a96606ef21224706) / [Sub](#Section_b8c448b764f6496f9bc9fdfa7590e8fd) / [Subject](#Section_6f5c323509474428ae584ae48c4ba6f9) / [Substitute](#Section_88777438adb14fb681cf54c405a515a0) / [Sum](#Section_64e4f0d78f46483692dbec3de9ce5625) / [Tan](#Section_3fb0e169d1124f49b74628f306f254d8) / [TanH](#Section_6a13a9e654344117a672ee9c13678ed9) / [TextHeight](#Section_f8a915fc26ea405db2e8303a73f4e275) / [TextWidth](#Section_06b4900e0d4741aa86411d074cf83d31) / [Theme](#Section_0bb5ca51f92a4e2a8ba6baceba0de879) / [ThemeCBV](#Section_a6f0642830dd4461b05e8a5a5e86299d) / [ThemeGuard](#Section_cf7a74ad1aea43779fe7d19c40d92d20) / [ThemeProp](#Section_bd72b8b3fbf74463ad23cd8a5cc4acfd) / [ThemeRestore](#Section_b81d964131a24f609b74eba256dd58e2) / [ThemeVal](#Section_7f01db8e32d540df966f70cc1eeb9225) / [Time](#Section_c8a0fece684b4a0f85c74a24cac4e813) / [TimeValue](#Section_4df1ed74a2a64d54b67885cc0999d8fe) / [Tint](#Section_697059c0410b4266a7313bb37c214a9e) / [Title](#Section_4ff8fdd26365487bac287126cb630839) / [Tone](#Section_7a421f2e1a0144fc86f95bc13c1e2705) / [Trim](#Section_4e6efb5d7de14c2285becf49e08f24f2) / [Trunc](#Section_f2e18cbeb08a4043802b8919e44308c3) / [UMinus](#Section_73239ed169d3486aa41085ee7143d47f) / [UniChar](#Section_68f68010044340899f0560e7d21083b9) / [UPlus](#Section_385637b4c1d1479cbec5a3d4e630b145) / [Upper](#Section_61481746becf46e385b7ed542cc68baa) / [Use](#Section_baa06b88433f4e3093dac8a5b870e6b9) / [Version](#Section_f28ecd7b2b224f9ba7615d81198860e7) / [WeekDay](#Section_19b79a97bbea4ed1b4f4cb4bce6dd275) / [Year](#Section_9b1a3d3d546a45a5a4774c4eb2aa875e) / functiondef
4. functiondef = ALPHA \*(ALPHA / DIGIT / "\_") "(" [val \*("," val)] ")"
5. token = [PtgAcre](#Section_4ed092ea74dc47fd8782a72b8af9b84f) / [PtgAngDD](#Section_75dc4549eb3d4bfc8e3c73cc5345cd1f) / [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c) / [PtgAngDMS](#Section_5c6f61c206784a5aba6b1d8407ea7bd0) / [PtgAngRad](#Section_992d1e2bd40941a08b49675a67496aad) / [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) / [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) / [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) / [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) / [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) / [PtgEDay](#Section_9411fd36e6e64f2d8022bfb30daefdc6) / [PtgEHour](#Section_339a94e35a804f36a56ffc3520ab9dbf) / [PtgEMin](#Section_0bde3065fff94775b972fb4580aae9c7) / [PtgErr](#Section_93a276b0294d468587050798f619a88d) / [PtgESec](#Section_81e009e4b1e74007afe74d6c05843476) / [PtgEWeek](#Section_d6b91ccf04bf458dbe274a44eb2a7ec1) / [PtgHectare](#Section_6e8458cd0701450986110a116d14cfa9) / [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) / [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) / [PtgNumCM](#Section_329125cb42144abe925c46f77abb9b93) / [PtgNumDft](#Section_c1c1c5f00830454fbb52f3169c43b3ca) / [PtgNumF](#Section_4099d68402ca4cf9865d18a93ff5e701) / [PtgNumFI](#Section_9ed637b4cfc141ffbbb5e04b5d9cebb4) / [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822) / [PtgNumKM](#Section_a0b32592ed6b4b4c8729d2a94ce45397) / [PtgNumM](#Section_b0afad8bab4543a7975e371aecf81773) / [PtgNumMI](#Section_dc6dab5c773c48798bb6ab47950d3906) / [PtgNumMM](#Section_0ec7d8b3108c4eb0b1abff361b35f046) / [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) / [PtgNumNM](#Section_7dd9e771a61f4f47bc5074c0473e39da) / [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) / [PtgNumYards](#Section_0541f25e2b9544e782cdd9d5263dff38) / [PtgNurbs](#Section_28741816c5ba4ee6a73801938ff478c4) / [PtgPageDft](#Section_b444caac3e8b41bfaa556fd84dec0faf) / [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8) / [PtgPolyLine](#Section_ca51a3f3efbc40ff844b7c54730e31c9) / [PtgShort](#Section_f7b9155c4ceb4742bdf4db90e2d5220c) / [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) / [PtgTDurDft](#Section_88d43cf9dc69435f84e56fb7df3d786b) / [PtgTypCD](#Section_a4caa003fcf04e468b95d146a708f2e7) / [PtgTypCi](#Section_312a4de63b514f84837766c28a767143) / [PtgTypDft](#Section_3c1afeb46a104059866977b105fcc380) / [PtgTypDi](#Section_b9a9ab05727348d586c920a1807b7ef6) / [PtgTypPi](#Section_4bb1f53c92974bdfacc0806610d50e25) / [PtgTypPP](#Section_2e9fc0fa541c4cf9a4df431e3b94925d) / [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5) / [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62)
6. ref = [sheetref "!"] [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)
7. sheetref = [CrossPageRef](#Section_47586acdcb584444a4b7f813f7fedaca) / [DocSheetRef](#Section_e6619635198a4486b718c5273ed1e2c6) / [MasterSheetRef](#Section_435b2f8945b145ceb36b1b89c7862cd8) / [PageSheetRef](#Section_5837d1f1d2f346f283d778f8d8bb725c) / [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470) / [StyleSheetRef](#Section_500ba523e86b4d2e853771726409e2ba)
8. name = 1\*(ALPHA / DIGIT / "\_")
9. nameid = "'" name "'" / name ["." 1\*DIGIT]
10. id = 1\*DIGIT
11. color-value = "#" 6HEXDIG
12. dimension = unsigned-int-value
13. int-value = ["+" / "-"] 1\*DIGIT
14. short-value = ["+" / "-"] 1\*DIGIT
15. unsigned-int-value = ["+"] 1\*DIGIT
16. unsigned-byte-value = ["+"] 1\*DIGIT
17. double-value = ["+" / "-"] (\*DIGIT ["."] 1\*DIGIT / 1\*DIGIT ".")  
     ["e" ["+" / "-"] 1\*DIGIT]
18. bool-value = ("true" / "1") / ("false" / "0")
19. string-value = \*utf8-char ; [[RFC3629]](https://go.microsoft.com/fwlink/?LinkId=90439) UTF-8 strings
20. utf8-char = ascii-char / utf8-non-ascii-chars
21. ascii-char = HTAB / LF / CR / SP / VCHAR ; Whitespace and printing chars
22. utf8-non-ascii-chars = (%xC0-DF 1utf8-content) /
23. (%xE0-EF 2utf8-content) /
24. (%xF0-F7 3utf8-content) /
25. (%xF8-FB 4utf8-content) /
26. (%xFC-FD 5utf8-content)
27. utf8-content = %x80-BF

### Order of Operations

When evaluating a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), a set of rules determines the order in which the different parts of the expression are evaluated. Rules with the lowest precedence numbers are evaluated first. Unless specified otherwise, expressions are evaluated from left to right.

| Precedence | Operators | Meaning |
| --- | --- | --- |
| 1 | ( ) | Parenthesized expressions are evaluated with the highest precedence in order of the most-nested to the least-nested expression, where most-nested is the expression enclosed in the most sets of matching parenthesis.  In the following example, **val2** is the most-nested expression and would therefore be evaluated before **val1:**  ( val1 + ( val2 ) ) |
| 2 | + (unary),  - (unary) | Identity and negation expressions. |
| 3 | ^ | Exponentiation expressions: [Pow](#Section_8beecf8a9687439f82fcdf8431b3a113). |
| 4 | \*, / | Multiplication and division expressions: [Mul](#Section_b0301eb2acef4187900168f51276aa44), [Div](#Section_b5041cf5c8f64ae68a5484adefe92ea5). |
| 5 | + (binary),  - (binary) | Addition and subtraction expressions: [Add](#Section_7214059a9c084ed3a185d7a4acee8016), [Sub](#Section_b8c448b764f6496f9bc9fdfa7590e8fd). |
| 6 | & | String concatenation expressions: [Cat](#Section_25a98ccb3134489c91e9bc3593146095). |
| 7 | <, \_LT\_,  <=, \_LE\_,  >, \_GT\_  >=, \_GE\_ | Fuzzy and exact comparison expressions: [FLT](#Section_ce135996ace44c1bba49a56b0cdcd343), [ELT](#Section_ef785368ec0f4513a05d1ccefd7d674f), [FLE](#Section_a210058957e64e679f14bdbd51916a09), [ELE](#Section_fada1509d0224a95865965ac88c6d06e), [FGT](#Section_80b6f2f92f5c4ad3a499dc3bd9bf2620), [EGT](#Section_f739ef9f07c94a9db979f49f86977b2f), [FGE](#Section_11f98d222d4d47eea89f4293dfd4f8d4), [EGE](#Section_36c336c463724cacaf73b3f53818a803). |
| 8 | =, \_EQ\_, <>, \_NE\_, | Fuzzy and exact equality and inequality expressions: [FEQ](#Section_f505443520b44b46934c402f45ce9d34), [EEQ](#Section_d20617d820be4fe2994257248484ab16), [FNE](#Section_071f635730fc48ce9c9941f4ca1c1e9d), [ENE](#Section_a50a1ac332404e36b5de968c8bd5beb2). |

### Function Token Definitions

The following function token definition sections specify the [function tokens](#Section_71b8cdb618854fa2a75016d6626054f4) that can be contained in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), in addition to those defined through [sheet extensibility](#Section_c443f7e03a254e5c9c627f92864d4890). The definition of each function specifies the function name, the type and sequence of expected arguments, and the type of token returned.

Information is also included about how the functions are evaluated. Unless a different [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) is explicitly specified, each function is evaluated in the reference context specified by the [sheet](#Section_fd48786aaeee44ce84b100884dc31200) containing the function’s formula expression.

#### Abs

The **Abs** function performs an absolute value calculation.

**ABNF:**

1. Abs = "ABS(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a vNum custom token grouping containing the absolute value of **Arg1**. The unit of the return value is equal to the unit of **Arg1**.

#### ACos

The **ACos** function performs an arccosine calculation.

**ABNF:**

1. ACos = "ACOS(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgAngDft parse token containing the arccosine of the value of **Arg1**. If **Arg1** is less than ­1 or greater than one, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Add

The **Add** function performs an addition calculation.

**ABNF:**

1. Add = "\_ADD(" val "," val ")" / val "+" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDoubleEx](#Section_311bb3d6a0404a929b29e51641563a9c)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDoubleEx

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a vNum custom token grouping or a **PtgCy** parse token containing the sum of **Arg1** and **Arg2**. The type of the return value is calculated by the following algorithm.

1. SET returnType = PtgNum
2. SET returnDimension = 0
3. SET returnCurrencyID = 0
4. IF Arg1.Type = PtgCy AND Arg2.Type != PtgCy THEN
5. SET returnType = PtgCy
6. SET returnCurrencyID = currencyID of Arg1
7. ELSE IF Arg1.Type != PtgCy AND Arg2.Type = PtgCy THEN
8. SET returnType = PtgCy
9. SET returnCurrencyID = currencyID of Arg2
10. ELSE IF Arg1.Type = PtgCy AND Arg2.Type = PtgCy THEN
11. SET returnType = PtgCy
12. IF currencyID of Arg1 = currencyID of Arg2 OR currencyID of Arg2 = 1 THEN
13. SET returnCurrencyID = currencyID of Arg1
14. ELSE IF currencyID of Arg1 = 1 THEN
15. SET returnCurrencyID = currencyID of Arg2
16. ELSE
17. SET returnType = PtgErr
18. END IF
19. ELSE IF Arg1.Type = PtgDate THEN
20. SET returnType = Arg1.Type
21. SET returnDimension = 1
22. ELSE IF Arg2.Type= PtgDate THEN
23. SET returnType = Arg2.Type
24. SET returnDimension = 1
25. ELSE IF Arg1.Unit = PtgNumDft AND Arg2.Unit is a vUnitType THEN
26. SET returnType = Arg2.Unit
27. SET returnDimension = 1
28. ELSE IF Arg1.Unit is a vUnitType THEN
29. SET returnType = Arg1.Unit
30. IF Arg2.Dimension = 0 OR Arg2.Dimension = Arg1.Dimension THEN
31. SET returnDimension = Arg1.Dimension
32. ELSE
33. SET returnDimension = 1
34. END IF
35. IF (returnType = PtgAcre OR returnType = PtgHectare) AND returnDimension != 2 THEN
36. SET returnType = PtgNumDft
37. END IF
38. ELSE IF Arg2.Unit is a vUnitType THEN
39. SET returnType = Arg2.Unit
40. IF Arg1.Dimension = 0 OR Arg2.Dimension = Arg1.Dimension THEN
41. SET returnDimension = Arg2.Dimension
42. ELSE
43. SET returnDimension = 1
44. END IF
46. IF (returnType = PtgAcre OR returnType = PtgHectare) AND returnDimension != 2 THEN
47. SET returnType = PtgNumDft
48. END IF
49. END IF
50. IF returnType = PtgCy THEN
51. Return type is PtgCy with currencyID = returnCurrencyID
52. ELSE IF returnType = PtgErr THEN
53. Return type is PtgErr with error code of #VALUE!
54. ELSE IF returnDimension = 0 THEN
55. Return type is PtgNum
56. ELSE IF returnDimension = 1 THEN
57. Return type is returnType
58. ELSE
59. Return type is PtgNumMultiDim with unit = returnType and dimension = returnDimension
60. END IF

#### And

The **And** function converts arguments to a Boolean value according to the conversion specified by [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548).

**ABNF:**

1. And = "AND(" val \*( "," val ) ")"

**Required Arguments:**

*Name:* **Args**

*Type:* [vBoolean](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

A set of arguments that specifies an operand.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **FALSE** if any of the arguments are equal to **FALSE**; otherwise, the value of **TRUE** is returned.

#### Ang360

The **Ang360** function normalizes an angle.

**ABNF:**

1. Ang360 = " ANG360(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b)

This function returns a vAngle custom token grouping containing an angle equivalent to **Arg1**, normalized to be greater than or equal to zero and less than 2\*pi, wherethe value of **Arg1** is assumed to have the unit of radians. If **Arg1** is a vAngle, the unit of the return value is equal to the unit of **Arg1**; otherwise, the function returns a [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c) parse token.

#### AngleToLoc

The **AngleToLoc** function performs a transformation of an angle from the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of one [shape](#Section_2995871af1b144e69754989fb760ee18) into the coordinate system of another shape.

**ABNF:**

1. AngleToLoc = "ANGLETOLOC(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "," val "," val ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an angle.

*Name:* **Source**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a source shape.

*Name:* **Destination**

*Type:* CellRef

An argument that specifies a reference to a cell in a destination shape.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a transformed angle in the coordinate system of the shape of **Destination** from **Angle** in a coordinate system of the shape of **Source**. If the **Source’s** shape and the **Destination’s** shape are not on the same [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), the function returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #VALUE!.

#### AngleToPar

The **AngleToPar** function performs a transformation of an angle from the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of one [shape](#Section_2995871af1b144e69754989fb760ee18) into the coordinate system of the parent of another shape.

**ABNF:**

1. AngleToPar = "ANGLETOPAR(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an angle.

*Name:* **Source**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a source shape.

*Name:* **Destination**

*Type:* CellRef

An argument that specifies a reference to a cell in a destination shape.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a transformed angle in the coordinate system of the parent [sheet](#Section_fd48786aaeee44ce84b100884dc31200) of a shape of **Destination** from **Angle** in the coordinate system of shape of **Source**. If the **Source’s** shape and the **Destination’s** shape are not on the same [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), the function returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #VALUE!.

#### ASin

The **ASin** function performs an arcsine calculation.

**ABNF:**

1. ASin = "ASIN(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgAngDft parse token containing the arcsine of the value of **Arg1**. If **Arg1** is less than -1 or greater than one, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### ATan2

The **ATan2** function calculates the angle between the positive x-axis and a vector.

**ABNF:**

1. ATan2 = "ATAN2(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the y-component of the vector.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the x-component of the vector.

**Return Value:**

*Type:* [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c)

This function returns a PtgAngDft parse token containing the angle between the positive x-axis and the vector represented by **Arg1** and **Arg2**. The value is greater than -pi and less than or equal to pi. If **Arg1** is equal to zero and **Arg2** is equal to zero, the value is zero.

#### ATan

The **ATan** function performs an arctangent calculation.

**ABNF:**

1. ATan = "ATAN(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c)

This function returns a PtgAngDft parse token containing the arctangent of the value of **Arg1**.

#### BitAnd

The **BitAnd** function performs a bitwise AND operation.

**ABNF:**

1. BitAnd = "BITAND(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vUnsignedInt

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the value of the bitwise AND operation between **Arg1** and **Arg2**.

#### BitNot

The **BitNot** function performs a bitwise NOT operation.

**ABNF:**

1. BitNot = "BITNOT(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the value of the bitwise NOT operation on **Arg1**.

#### BitOr

The **BitOr** function performs a bitwise OR operation.

**ABNF:**

1. BitOr = "BITOR(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vUnsignedInt

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62)

This function returns a PtgNum parse token containing the value of the bitwise OR operation between **Arg1** and **Arg2**.

#### BitXor

The **BitXor** function performs a bitwise XOR operation.

**ABNF:**

1. BitXor = "BITXOR(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vUnsignedInt

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the value of the bitwise XOR operation between **Arg1** and **Arg2**.

#### BkgPageName

The **BkgPageName** function returns the name of a [background drawing page](#Section_87f5433c7da245f4936b57cad345a301).

**ABNF:**

1. BkgPageName = [CrossPageRef "!"] "BKGPAGENAME(" [ val ] ")"

**Optional Arguments:**

*Name:* **Arg1**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument to specify the language of the return value.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns the name of the background drawing page in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) or reference context specified by [CrossPageRef](#Section_47586acdcb584444a4b7f813f7fedaca).

If the value of **Arg1** is 750, the **NameU** attribute of the [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element associated with the background drawing page is returned.

If the value of **Arg1** is not 750, the **Name** attribute of the Page\_Type element associated with the background drawing page is returned.

If the [sheet](#Section_fd48786aaeee44ce84b100884dc31200) does not have a background drawing page and the value of **Arg1** is 750, the string "<no background>" is returned.

If the sheet does not have a background drawing page and the value of **Arg1** is not 750, a language-dependent translation of the string "<no background>" is returned.

#### Blend

The **Blend** function performs a blend of two colors.

**ABNF:**

1. Blend = "BLEND(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Color1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the first color.

*Name:* **Color2**

*Type:* vColor

An argument that specifies the second color.

*Name:* **Fraction**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the fractional amount of **Color2** in the blended color.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgColorRGB parse token containing the blended color. If **Fraction** is less than zero or greater than one, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Bound

The **Bound** function constrains a value by one or more ranges.

**ABNF:**

1. Bound = "BOUND(" val "," val 1\*( "," val "," val "," val) ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the value to be constrained.

*Name:* **BoundType**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the bounding type. The valid values are described in the following table.

|  |  |
| --- | --- |
| Value | Meaning |
| 0 | Constrain **Number** inclusive of any of the ranges specified. |
| 1 | Constrain **Number** exclusive of all the ranges specified. |
| 2 | Do not constrain **Number.** |

*Name:* **IgnoreRange**

*Type:* [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument that specifies whether this range is included in constraining the **Number** or not.

*Name:* **ValueBeg**

*Type:* vDouble

An argument that specifies the beginning value of the range.

*Name:* **ValueEnd**

*Type:* vDouble

An argument that specifies the ending value of the range.

**Optional Arguments:**

Additional ranges MUST be specified using one or more additional groups of **IgnoreRange**, **ValueBeg**, and **ValueEnd**.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a vNum custom token grouping containing the constrained value of **Number,** as described in the following table.

| Condition | Result |
| --- | --- |
| **BoundType** = 0 | If **Number** is in at least one range with **IgnoreRange** equal to FALSE, the function returns **Number.**  Otherwise, consider the set of all **ValueBeg** and **ValueEnd** values that belong to a range with **IgnoreRange** equal to FALSE. The function returns the value in this set that is closest to **Number**. If more than one value has the same minimum distance from **Number**, the function returns the value in this set that has minimum distance from **Number** and that appears earliest in the argument list. |
| **BoundType** = 1 | If **Number** is not in any range with **IgnoreRange** equal to FALSE, the function returns **Number**.  Otherwise, consider the set of all **ValueBeg** and **ValueEnd** values that belong to a range with **IgnoreRange** equal to FALSE and that are not nested inside another range with **IgnoreRange** equal to FALSE. The function returns the value in this set that is closest to **Number**. If **Number** is in the exact middle of a **ValueBeg** value and a **ValueEnd** value in this set, the function returns the **ValueEnd** value. |
| **BoundType** = 2 | The function returns **Number**. |
| **Otherwise** | The function returns a PtgErr parse token with an error code equal to #VALUE!. |

If **Number** is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping, the return value is normalized to be greater than or equal to zero and less than 2\*pi. The unit of the return value is equal to the unit of **Number**. If **Number** is a [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8) or the wrong number of arguments is used, the function returns a PtgErr with an error code equal to #VALUE!.

#### Cat

The **Cat** function performs a concatenation of two strings.

**ABNF:**

1. Cat = "\_CAT(" val "," val ")" / val "&" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies the first string.

*Name:* **Arg2**

*Type:* vString

An argument that specifies the second string.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a PtgString parse token containing the concatenation of **Arg1** and **Arg2**.

#### Category

The **Category** function returns a Category property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Category = "CATEGORY()"

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns the Category property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### Ceiling

The **Ceiling** function performs a ceiling calculation.

**ABNF:**

1. Ceiling = "CEILING(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the value to be rounded.

**Optional Arguments:**

*Name:* **Multiple**

*Type:* vDouble

An argument that specifies the rounding increment. The default value is one if **Number** is greater than or equal to zero, and -1 if **Number** is less than zero.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a vNum custom token grouping containing the next multiple of **Multiple** after **Number** that is further from zero. The unit of the return value is equal to the unit of **Number**.

If **Number** is a multiple of **Multiple**, the returned value is equal to **Number**.

If either **Number** or **Multiple** is equal to zero, the returned value is zero.

If **Number** and **Multiple** do not have the same sign, the function returns a PtgErr parse token with an error code equal to #NUM!.

If **Number** does not specify a vNum, the function returns a PtgErr with an error code equal to #VALUE!.

#### CellIsThemed

The **CellIsThemed** function returns a value of the passed argument.

**ABNF:**

1. CellIsThemed = "CELLISTHEMED(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument to be returned.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with the value of **Arg1**.

#### Char

The **Char** function performs a conversion from an integer to the corresponding character in the [**American National Standards Institute (ANSI) character set**](#gt_100cd8a6-5cb1-4895-9de6-e4a3c224a583).

**ABNF:**

1. Char = "CHAR(" val ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies an integer.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgString parse token containing the character that corresponds to **Number**. If **Number** is less than one or greater than 255, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Company

The **Company** function returns a **Company** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Company = "COMPANY()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Company** property, specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 22.2.2.5, from the [App XML part](#Section_85e85f4058134276aed798b4d83506d0) of a web drawing.

#### Cos

The **Cos** function performs a cosine calculation.

**ABNF:**

1. Cos = "COS(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation. If **Arg1** is not a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping, the value of **Arg1** is assumed to have the unit of radians.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the cosine of the value of **Arg1**.

#### CosH

The **CosH** function performs the hyperbolic cosine calculation.

**ABNF:**

1. CosH = "COSH(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation. If **Arg1** is not a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping, the value of **Arg1** is assumed to have the unit of radians.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the hyperbolic cosine of **Arg1**.

#### Creator

The **Creator** function returns a Creator property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Creator = "CREATOR()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Creator** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### CY

The **CY** function returns a currency.

**ABNF:**

1. CY = "CY(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **Value**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the currency value.

**Optional Arguments:**

*Name:* **Cy**

*Type:* [vCurrency](#Section_afa85c0df5d947488108d3e5ac691720)

An argument that specifies the currency. It defaults to a value of -1, if missing.

**Return Value:**

*Type:* [PtgCY](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgCY parse token containing **Value** and **Cy**. If **Cy** is not found in the table of vCurrency the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Date

The **Date** function returns a date, according to the Gregorian calendar, from values representing a year, month, and day.

**ABNF:**

1. Date = "DATE(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Year**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies a year. A value from zero through 29 (inclusive) corresponds to the range of years from 2000 through 2029 (inclusive). A value from 30 through 100 (inclusive) corresponds to the range of years from 1930 through 2000 (inclusive). A value greater than 100 corresponds to that year. It MUST be less than or equal to 9999.

*Name:* **Month**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies an offset in months from December first of the previous year.

*Name:* **Day**

*Type:* vSignedInt

An argument that specifies an offset in days from the last day of the previous month.

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgDate parse token containing the date, according to the Gregorian calendar, represented by **Year**, **Month**, and **Day**. If the arguments specify a date before January 1st, 1899 or between January 1st, 1900 and November 30th, 1900 inclusively, the function returns a PtgErr parse token with an error code equal to #NUM!. If either **Month** or **Day** cannot be interpreted as a type of vSignedInt, the function returns a PtgErr with an error code equal to #VALUE!.

#### DateTime

The **DateTime** function converts a value to a date and time.

**ABNF:**

1. DateTime = "DATETIME(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a value representing a date and time.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies a [**language code identifier (LCID)**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

If **DateTimeArg** is a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token, this function attempts to parse it using date and time format strings according to .NET globalization rules for **Locale**. For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669). If the string is successfully parsed, the function returns a PtgDate parse token containing the parsed date and time. If the string is not successfully parsed, the function returns a PtgErr parse token with an error code equal to #VALUE!.

If **DateTimeArg** is not a PtgString, the function returns a PtgDate containing the value of **DateTimeArg** interpreted as a type of [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc). If **DateTimeArg** cannot be interpreted as a vDouble, the function returns a PtgErr with an error code equal to #VALUE!.

#### DateValue

The **DateValue** function returns a date component from a value representing a date and time.

**ABNF:**

1. DateValue = "DATEVALUE(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a value representing a date and time.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a PtgDate parse token. If the conversion is successful, the function returns a PtgDate containing the date component of **DateTimeArg**. If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Day

The **Day** function returns a day of the month, according to the Gregorian calendar, from a value representing a date and time.

**ABNF:**

1. Day = "DAY(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the day of the month component of **DateTimeArg.** If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### DayOfYear

The **DayOfYear** function returns a day of the year, according to the Gregorian calendar, from a value representing a date and time.

**ABNF:**

1. DayOfYear = "DAYOFYEAR(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the day of the year component from **DateTimeArg.** If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Deg

The **Deg** function performs a conversion to an angle in degrees.

**ABNF:**

1. Deg = "DEG(" val ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an angle.

**Return Value:**

*Type:* [PtgAngDD](#Section_75dc4549eb3d4bfc8e3c73cc5345cd1f)

This function returns a PtgAngDD parse token containing the value of **Angle**.

#### DependsOn

The **DependsOn** function returns a value of FALSE.

**ABNF:**

1. DependsOn = "DEPENDSON(" 1\*( val ) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

One or more arguments to be ignored.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of FALSE.

#### Description

The **Description** function returns the **Description** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Description = "DESCRIPTION()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Description** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### Directory

The **Directory** function returns a path to a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Directory = "DIRECTORY()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the path to a web drawing.

#### Div

The **Div** function performs a division calculation.

**ABNF:**

1. Div = "\_DIV(" val "," val ")" / val "/" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDoubleEx](#Section_311bb3d6a0404a929b29e51641563a9c)

An argument that specifies the first operand of the division operation.

*Name:* **Arg2**

*Type:* vDoubleEx

An argument that specifies the second operand of the division operation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a **vNum** custom token grouping (section 2.5.7.4) or a **PtgCy** parse token (section 2.5.4.9) containing the result of **Arg1** divided by **Arg2**. The type of the return value is calculated by the following algorithm.

1. SET returnType = PtgNum
2. SET returnError = #VALUE!
3. SET returnDimension = 0
4. SET returnCurrencyID = 0
5. IF Arg2.Value = 0 THEN
6. SET returnType = PtgErr
7. SET returnError = #DIV/0
8. ELSE IF Arg1.Type = PtgCy AND Arg2.Type != PtgCy THEN
9. SET returnType = PtgCy
10. SET returnCurrencyID = currencyID of Arg1
11. ELSE IF Arg1.Type != PtgCy AND Arg2.Type = PtgCy THEN
12. SET returnType = PtgCy
13. SET returnCurrencyID = currencyID of Arg2
14. ELSE IF Arg1.Type = PtgCy AND Arg2.Type = PtgCy THEN
15. SET returnType = PtgCy
16. IF currencyID of Arg1 = currencyID of Arg2 OR currencyID of Arg2 = 1 THEN
17. SET returnCurrencyID = currencyID of Arg1
18. ELSE IF currencyID of Arg1 = 1 THEN
19. SET returnCurrencyID = currencyID of Arg2
20. ELSE
21. SET returnType = PtgErr
22. SET returnError = #VALUE!
23. END IF
24. ELSE IF Arg1.Unit is a vUnitType AND Arg2.Unit is not a vUnitType THEN
25. SET returnType = Arg1.Unit
26. SET returnDimension = Arg1.Dimension
27. ELSE IF Arg1.Unit is not a vUnitType AND Arg2.Unit is a vUnitType THEN
28. SET returnType = Arg2.Unit
29. IF called via '\_DIV' function rather than '/' operator THEN
30. SET returnDimension = -Arg2.Dimension
31. ELSE
32. SET returnDimension = Arg2.Dimension
33. END IF
34. ELSE
35. IF Arg1.Unit = PtgNumPct AND Arg2.Unit = PtgNumPct THEN
36. SET returnDimension = 1
37. ELSE IF Arg1.Unit = PtgNumPct THEN
38. SET returnDimension = -Arg2.Dimension
39. ELSE IF Arg2.Unit = PtgNumPct THEN
40. SET returnDimension = Arg1.Dimension
41. ELSE
42. SET returnDimension = Arg1.Dimension – Arg2.Dimension
43. IF Arg1.Unit is a vUnitType THEN
44. SET returnType = Arg1.Unit
45. ELSE
46. SET returnType = Arg2.Unit
47. END IF
48. END IF
49. IF returnType = PtgCy THEN
50. Return type is PtgCy with currencyID = returnCurrencyID
51. ELSE IF returnType = PtgErr THEN
52. Return type is PtgErr with error code of returnError
53. ELSE IF (returnType = PtgAcre OR returnType = PtgHectare) AND returnDimension != 2 THEN
54. Return type is PtgNumMultiDim with unit = PtgNumDft and dimension = returnDimension
55. ELSE IF returnDimension = 0 THEN
56. Return type is PtgNum
57. ELSE IF returnDimension = 1 THEN
58. Return type is returnType
59. ELSE
60. Return type is PtgNumMultiDim with unit = returnType and dimension = returnDimension
61. END IF

#### DocCreation

This function returns the DocCreation property of a [Web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. DocCreation = "DOCCREATION()"

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)

This function returns the **DocCreation** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### DocLastEdit

The **DocLastEdit** function returns a **Modified** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. DocLastEdit = "DOCLASTEDIT()"

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)

This function returns the **Modified** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### DocLastPrint

The **DocLastPrint** function returns the **lastPrinted** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. DocLastPrint = "DOCLASTPRINT()"

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)

This function returns the **lastPrinted** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### DocLastSave

The **DocLastSave** function returns a **Modified** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. DocLastSave = "DOCLASTSAVE()"

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)

This function returns the **Modified** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### EEQ

The **EEQ** function calculates if **Arg1** is equal to **Arg2**.

**ABNF:**

1. EEQ = "\_EEQ(" val "," val ")" / val "\_EQ\_" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is equal to **Arg2**; otherwise, the value **FALSE** is returned.

#### EGE

The **EGE** function calculates if **Arg1** is greater than or equal to **Arg2**.

**ABNF:**

1. EGE = "\_EGE(" val "," val ")" / val "\_GE\_" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is greater than or equal to **Arg2**; otherwise, the value **FALSE** is returned.

#### EGT

The **EGT** function calculates if **Arg1** is greater than **Arg2**.

**ABNF:**

1. EGT = "\_EGT(" val "," val ")" / val "\_GT\_" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is greater than **Arg2**; otherwise, the value **FALSE** is returned.

#### ELE

The **ELE** function calculates if **Arg1** is less than or equal to **Arg2**.

**ABNF:**

1. ELE = "\_ELE(" val "," val ")" / val "\_LE\_" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is less than or equal to **Arg2**; otherwise, the value **FALSE** is returned.

#### ELT

The **ELT** function calculates if **Arg1** is less than **Arg2**.

**ABNF:**

1. ELT = "\_ELT(" val "," val ")" / val "\_LT\_" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is less than **Arg2**; otherwise, the value **FALSE** is returned.

#### ENE

The **ENE** function calculates if **Arg1** is not equal to **Arg2**.

**ABNF:**

1. ENE = "\_ENE(" val "," val ")" / val "\_NE\_" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is not equal to **Arg2**; otherwise, the value of **FALSE** is returned.

#### FEQ

The **FEQ** function calculates if the absolute value of the difference between **Arg1** and **Arg2** is less thanor equal to1E-9 (0.000000001).

**ABNF:**

1. FEQ = "\_FEQ(" val "," val ")" / val "=" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if the absolute value of the difference between **Arg1** and **Arg2** is less than or equal to 1E-9; otherwise, the value **FALSE** is returned.

#### FGE

The **FGE** function calculates if the difference between **Arg1** and **Arg2** is greater than or equal to -1E-9 (-0.000000001).

**ABNF:**

1. FGE = "\_FGE(" val "," val ")" / val ">=" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if the difference between **Arg1** and **Arg2** is greater than or equal to 1E-9; otherwise, the value **FALSE** is returned.

#### FGT

The **FGT** function calculates if **Arg1** is greater than **Arg2** by at least the amount of 1E-9 (0.000000001).

**ABNF:**

1. FGT = "\_FGT(" val "," val ")" / val ">" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is greater than **Arg2** by more than 1E-9 (0.000000001); otherwise, the value **FALSE** is returned.

#### FieldPicture

The **FieldPicture** function returns a format string.

**ABNF:**

1. FieldPicture = "FIELDPICTURE(" val ")"

**Required Arguments:**

*Name:* **Index**

*Type:* [vFieldPicture](#Section_4ef6189293444401b53e845082be420e)

An argument that specifies a field picture index.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a field picture format string based on **Index** as specified in the vFieldPicture custom structure.

#### FileName

The **FileName** function returns a file name of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. FileName = "FILENAME()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the file name of a web drawing.

#### Find

The **Find** function returns the index of the first instance of a text string within another text string.

**ABNF:**

1. Find = "FIND(" val "," val [ "," [ val ] "," [ val ]] ")"

**Required Arguments:**

*Name:* **FindText**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies the string to be found.

*Name:* **WithinText**

*Type:* vString

An argument that specifies the string to search within.

**Optional Arguments:**

*Name:* **StartNum**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the one-based position at which this function starts a search. The default value is one.

*Name:* **IgnoreCase**

*Type:* [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument that specifies whether the search is case insensitive. A value of **TRUE** specifies that case is ignored. The default value is **FALSE**.

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgInt parse token containing the one-based position in **WithinText** at which **FindText** is found.

If **FindText** is empty and **StartNum** is less than or equal to the number of characters in **WithinText**, the function returns a PtgInt containing the value of **StartNum**.

If **FindText** is empty and **StartNum** is greater than the number of characters in **WithinText**, the function returns a PtgInt containing the value of the number of characters in **WithinText** + 1.

If **FindText** is not found or if **StartNum** is equal to zero or greater than the number of characters in **WithinText**, the function returns a PtgErr parse token with an error code equal to #VALUE!.

The search is performed according to .NET globalization rules based on the value of the **Language** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

#### FLE

The **FLE** function calculates if the difference between **Arg1** and **Arg2** is less than or equal to 1E-9 (0.000000001).

**ABNF:**

1. FLE = "\_FLE(" val "," val ")" / val "<=" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if the difference between **Arg1** and **Arg2** is less than or equal to 1E-9; otherwise, the value FALSE is returned.

#### Floor

The **Floor** function performs a floor calculation.

**ABNF:**

1. Floor = "FLOOR(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the value to be rounded.

**Optional Arguments:**

*Name:* **Multiple**

*Type:* vDouble

An argument that specifies the rounding increment. The default value is one if **Number** is greater than or equal to zero, and -1 if **Number** is less than zero.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a vNum custom token grouping containing the previous multiple of **Multiple** before **Number** that is closer to zero. The unit of the return value is equal to the unit of **Number**.

If **Number** is a multiple of **Multiple**, the returned value is equal to **Number**.

If either **Number** or **Multiple** is equal to zero, the returned value is zero.

If **Number** and **Multiple** do not have the same sign, the function returns a PtgErr parse token with an error code equal to #NUM!.

If **Number** does not specify a vNum, the function returns a PtgErr with an error code equal to #VALUE!.

#### FLT

The **FLT** function calculates if **Arg1** is less than **Arg2** by at least the amount of 1E-9 (0.000000001).

**ABNF:**

1. FLT = "\_FLT(" val "," val ")" / val "<" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** is less than **Arg2** by more than 1E-9 (0.000000001); otherwise, the value FALSE is returned.

#### FNE

The **FNE** function calculates if **Arg1** differs from **Arg2** by at least the amount of 1E-9 (0.000000001).

**ABNF:**

1. FNE = "\_FNE(" val "," val ")" / val "<>" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDouble

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if **Arg1** differs from **Arg2** by more than 1E-9 (0.000000001); otherwise, the value FALSE is returned.

#### Format

The **Format** function formats a value as a string using the specified format string.

**ABNF:**

1. Format = "FORMAT(" val "," val ")"

**Required Arguments:**

*Name:* **Value**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies the value to be formatted.

*Name:* **FormatString**

*Type:* [vFormatString](#Section_ff39e94802a4435596e662456c2a775f)

An argument that specifies the formatting information used to format **Value**.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a PtgString parse token containing **Value** formatted as a string with **FormatString.** The formatting is performed as described in the custom structure vFormatString.

#### FormatEx

The **FormatEx** function formats a value as a string.

**ABNF:**

1. FormatEx = "FORMATEX(" val "," val [ "," [ val ] [ "," [ val ] [ "," [ val ] [ "," [ val ]]]]] ")"

**Required Arguments:**

*Name:* **Value**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies the value to be formatted.

*Name:* **FormatString**

*Type:* [vFormatString](#Section_ff39e94802a4435596e662456c2a775f)

An argument that specifies the formatting information used to format **Value**.

**Optional Arguments:**

*Name:* **SrcUnit**

*Type:* [vUnitString](#Section_c7234647083a40a29784e37a02db5f1f)

An argument that specifies the unit of **Value**.

*Name:* **DstUnit**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

An argument that specifies the unit displayed in the resulting string. It MUST be a vUnitString custom structure or a value equal to "NOCAST".

*Name:* **LangID**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) used to format **Value**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

*Name:* **CalID**

*Type:* [vCalendar](#Section_5d9ab6aa8a0646468771d3ff0e02ce96)

An argument that specifies a calendar system used to format **Value**. If the argument is omitted the value of zero is used.

**Return Value:**

*Type:* PtgString

This function returns a PtgString parse token containing **Value** with the unit specified by **SrcUnit**, converted into the unit specified by **DstUnit**, formatted as a string as specified by **FormatString**, **LangID**,and **CalID**. The formatting is performed as described in the custom structure vFormatString.

**Value** is converted into the unit specified by **DstUnit** as follows. If **DstUnit** contains the value of "NOCAST", the conversion is not performed. If **Value** is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) custom token grouping, **Value** is multiplied by a factor that converts the unit of **SrcUnit** into the [custom internal unit type](#Section_ea6328b8644b4f05bc9b03b6415eb764) associated with the type of **ScrUnit**. The resulting value, or **Value** if **Value** is a [vUnitType](#Section_46b90760f3eb4ae99c16c3ccac56f59f), is multiplied by a factor that converts the custom internal unit type associated with the type of **DstUnit** into the unit of **DstUnit.**

#### FormulaExists

The **FormulaExists** function returns whether a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) contains a formula.

**ABNF:**

1. FormulaExists = "FORMULAEXISTS(" val ")"

**Required Arguments:**

*Name:* Arg1

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a cell in a [shape](#Section_2995871af1b144e69754989fb760ee18).

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with the value of **TRUE** if the cell contains a formula. Otherwise, it returns a PtgBool with the value of **FALSE**.

#### Gravity

The **Gravity** function returns an angle.

**ABNF:**

1. Gravity = "GRAVITY(" val [ "," val [ "," val ]] ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an angle. It is normalized to be greater than or equal to zero and less than 2\*pi. If **Angle** is not a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping, the value of **Angle** is assumed to have the unit of degrees.

**Optional Arguments:**

*Name:* **Limit1**

*Type:* vDouble

An argument that specifies the first limit of rotation. It is normalized to be greater than or equal to zero and less than 2\*pi. It defaults to a value of 90 degrees.

*Name:* **Limit2**

*Type:* vDouble

An argument that specifies the second limit of rotation. It is normalized to be greater than or equal to zero and less than 2\*pi. It defaults to a value of 270 degrees.

**Return Value:**

*Type:* vAngle

This function returns a vAngle with a value of 180 degrees if **Angle** is between the value specified by **Limit1** and **Limit2**. Otherwise, the function returns a vAngle with a value of zero degrees.

#### Guard

The **Guard** function returns a value of the passed argument.

**ABNF:**

1. Guard = "GUARD(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument to be returned.

**Return Value:**

*Type:* vAny

This function returns the value of **Arg1**.

#### HasCategory

The **HasCategory** function returns whether there is any intersection of the category list of the [shape](#Section_2995871af1b144e69754989fb760ee18) and the category list of the operand. The category list of a shape is specified by the value its [msvShapeCategories](#Section_f9620ed03bf14e9fb848216eafc7bfb4) [user row](#Section_f120b280d58f4d24ac3a925337fb8af3).

**ABNF:**

1. HasCategory = "HASCATEGORY(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a semicolon-delimited list of category names. This category list has the same form as the category list described in msvShapeCategories.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with the value of **TRUE** if the shape's category list contains any of the categories specified by **Arg1**'s category list. If either the shape or **Arg1** has an empty category list, this function returns a **PtgBool** with the value of **FALSE**.

#### Hour

The **Hour** function returns an hour from a value representing a date and time.

**ABNF:**

1. Hour = "HOUR(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the hour component from **DateTimeArg.** If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### HSL

The **HSL** function transforms a color specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5) into a color specified in the [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color space. **HSL** component values are in the range zero to 240, inclusive.

**ABNF:**

1. HSL = "HSL(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Hue**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the hue component.

*Name:* **Saturation**

*Type:* vUnsignedInt

An argument that specifies the saturation component.

*Name:* **Luminance**

*Type:* vUnsignedInt

An argument that specifies the luminance component.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing the color value specified by **Hue**, **Saturation** and **Luminance**. If **Hue** is greater than 240 and less than or equal to 0xFF, this function sets the value to 240 and performs the operation. If the value of any of the arguments is greater than 0xFF, the function sets the argument’s value to the result of the bitwise AND operation between the original value and 0xFF, before performing the operation.

#### Hue

The **Hue** function calculates the hue component, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), of a color value.

**ABNF:**

1. Hue = "HUE(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the color.

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62)

This function returns a PtgNum parse token containing the hue of **Arg1**. The value is less than or equal to 240.

#### HueDiff

The **HueDiff** function calculates the difference in hue, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), between two color values.

**ABNF:**

1. HueDiff = "HUEDIFF(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the first color.

*Name:* **Arg2**

*Type:* vColor

An argument that specifies the second color.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing a value that is equal to the hue of **Arg1** minus the hue of **Arg2**. This value is greater than or equal to -240 and less than or equal to 240.

#### HyperlinkBase

The **HyperlinkBase** function returns the **HyperlinkBase** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. HyperlinkBase = "HYPERLINKBASE()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **HyperlinkBase** property, specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 22.2.2.11, from the [App XML part](#Section_85e85f4058134276aed798b4d83506d0) of a web drawing.

#### ID

The **ID** function returns a value of the identifier of a [shape](#Section_2995871af1b144e69754989fb760ee18).

**ABNF:**

1. ID = [ShapeSheetRef "!"] "ID()"

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns a PtgInt parse token containing the **ID** attribute of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element associated with the [shape sheet](#Section_58fee8aeb28d46668b78dacb48217060) of a shape in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) or reference context specified by [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470).

#### IF

The **IF** function returns the value of one of its operands based on the value of its first operand.

**ABNF:**

1. If = "IF(" val "," [ val ] "," [ val ] ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument that specifies which argument to return based on its value.

*Name:* **Arg2**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that defaults to a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token with the value of **TRUE** if missing.

*Name:* **Arg3**

*Type:* vAny

An argument that defaults to a PtgBool with the value of **FALSE** if missing.

**Return Value:**

*Type:* vAny

This function returns one of its arguments according to the following table.

|  |  |
| --- | --- |
| **Arg1** Value | Return Value |
| TRUE | **Arg2** |
| FALSE | **Arg3** |
| Error | **Arg1** |

#### IfError

The **IfError** function returns the value of the first operand if it does not evaluate to an error; otherwise, the value of the second operand is returned.

**ABNF:**

1. IfError = "IFERROR(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "," [ val ] ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument.

*Name:* **Arg2**

*Type:* vAny

An argument that defaults to a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) with the value of **FALSE** if missing.

**Return Value:**

*Type:* vAny

This function returns either **Arg1** if it does not evaluate to an error or **Arg2** otherwise.

#### Index

The **Index** function returns a substring from a delimited text string.

**ABNF:**

1. Index = "INDEX(" val "," val [ "," [ val ] "," [ val ]] ")"

**Required Arguments:**

*Name:* **IndexPosition**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies a [**zero-based index**](#gt_bc60c405-d92b-4a8c-b63b-e404b1cc4dc4) into **List**.

*Name:* **List**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string consisting of a [**list**](#gt_04ce231e-214c-44fd-b7ba-7cc19eee79bf) of substrings delimited by **Delimiter**. Consecutive delimiters or delimiters at the beginning and/or end of **List** specify empty substrings.

**Optional Arguments:**

*Name*: **Delimiter**

*Type*: vString

An argument that specifies the delimiter that separates substrings inside **List** with a default value of ";", if missing.

*Name*: **ErrorValue**

*Type*: vString, [PtgErr](#Section_93a276b0294d468587050798f619a88d)

An argument that specifies a string or error to be returned if **Index** is out of range. The default value is an empty string.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), PtgErr

This function returns a PtgString parse token equal to the substring at the zero-based index location **IndexPosition** in **List**, which is delimited by **Delimiter**.

If **IndexPosition** is less than zero or greater than or equal to the number of items in **List** and **ErrorValue** is of the parse token type PtgErr, the function returns **ErrorValue** as aPtgErr.

If **IndexPosition** is less than zero or greater than or equal to the number of items in **List** and **ErrorValue** is of custom structure type vString, the function returns a PtgString token that specifies **ErrorValue**.

#### Int

The **Int** function performs a rounding calculation down to the next lesser integer value.

**ABNF:**

1. Int = "INT(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the value to be rounded.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a custom token grouping of the type vNum containing the next lesser integer value if **Arg1** is not an integer. The unit of the return value is equal to the unit of **Arg1.**

#### IntersectX

The **IntersectX** function calculates the x-coordinate of the point where two lines intersect. Each line is defined by a point on the line and an angle.

**ABNF:**

1. IntersectX = "INTERSECTX(" val "," val "," val "," val "," val "," val ")"

**Required Arguments:**

*Name:* **X1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the x-coordinate of a point defining the first line.

*Name:* **Y1**

*Type:* vDouble

An argument that specifies the y-coordinate of a point defining the first line.

*Name:* **Angle1**

*Type:* vDouble

An argument that specifies an angle of the first line relative to the positive x-axis.

*Name:* **X2**

*Type:* vDouble

An argument that specifies the x-coordinate of a point defining the second line.

*Name:* **Y2**

*Type:* vDouble

An argument that specifies the y-coordinate of a point defining the second line.

*Name:* **Angle2**

*Type:* vDouble

An argument that specifies the angle of a second line relative to the positive x-axis.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a custom token grouping of the type vNum containing the x-coordinate of the point where two lines intersect. If any of the arguments **X1**, **Y1**, **X2**, **Y2** are a custom token grouping of the type [vUnitType](#Section_46b90760f3eb4ae99c16c3ccac56f59f), the unit of the return value is equal to the unit of the first of those arguments that is a vUnitType. If none of those arguments is a vUnitType, the function returns a [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) parse token. If **Angle1** equals **Angle2**, the function returns a PtgErr parse token with an error code equal to #DIV/0.

#### IntersectY

The **IntersectY** function calculates the y-coordinate of the point where two lines intersect. Each line is defined by a point on the line and an angle.

**ABNF:**

1. IntersectY = "INTERSECTY(" val "," val "," val "," val "," val "," val ")"

**Required Arguments:**

*Name:* **X1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the x-coordinate of a point defining the first line.

*Name:* **Y1**

*Type:* vDouble

An argument that specifies the y-coordinate of a point defining the first line.

*Name:* **Angle1**

*Type:* vDouble

An argument that specifies the angle of the first line relative to the positive x-axis.

*Name:* **X2**

*Type:* vDouble

An argument that specifies the x-coordinate of the point defining the second line.

*Name:* **Y2**

*Type:* vDouble

An argument that specifies the y-coordinate of the point defining the second line.

*Name:* **Angle2**

*Type:* vDouble

An argument that specifies the angle of the second line relative to the positive x-axis.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a custom token grouping of the type vNum containing the y-coordinate of the point where two lines intersect. If any of the arguments **X1**, **Y1**, **X2**, **Y2** are a custom token grouping of the type [vUnitType](#Section_46b90760f3eb4ae99c16c3ccac56f59f), the unit of the return value is equal to the unit of the first of those arguments that is a vUnitType. If none of those arguments are a vUnitType, the function returns a [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) parse token. If **Angle1** equals **Angle2**, the function returns a PtgErr parse token with an error code equal to #DIV/0.

#### Intup

The **Intup** function performs a rounding calculation up to the next greater integer value.

**ABNF:**

1. Intup = "INTUP(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies a value to be rounded.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a custom token grouping of the type vNum containing the next greater integer value if **Arg1** is not an integer. The unit of the return value is equal to the unit of **Arg1**.

#### Is1D

The **Is1D** function returns whether the [shape](#Section_2995871af1b144e69754989fb760ee18) contains [BeginX](#Section_bf96b96198884f5aa89d27dcf80ed494), [BeginY](#Section_aa0c49ec491a4371aff7d1a1179a9aa5), [EndX](#Section_7a68ed9a206049f2bff39296b518cc33), or [EndY](#Section_e4e68dcd0d7440bf91a83e51432996ac) cells.

**ABNF:**

1. Is1D = "IS1D()"

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with the value of **TRUE** if the shape contains any of the following cells: BeginX, BeginY, EndX, or EndY. Otherwise, it returns a PtgBool with the value of **FALSE**.

#### IsErr

The **IsErr** function calculates if the operand is a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token that does not have an error code equal to #N/A.

**ABNF:**

1. IsErr = "ISERR(" val ")"

**Required Arguments:**

*Name:* **Token**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a parse token of the type PtgBool with a value of **TRUE** if **Token** is a PtgErr parse token and the value of **Token** is not equal to #N/A; otherwise, the value of **FALSE** is returned.

#### IsErrNA

The **IsErrNA** function calculates if the operand is a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #N/A.

**ABNF:**

1. IsErrNa = "ISERRNA(" val ")"

**Required Arguments:**

*Name:* **Token**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a parse token of the type PtgBool with a value of **TRUE** if **Token** is a PtgErr and the value of **Token** is equal to #N/A; otherwise, the value **FALSE** is returned.

#### IsError

The **IsError** function calculates if the operand is a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token.

**ABNF:**

1. IsError = "ISERROR(" val ")"

**Required Arguments:**

*Name:* **Token**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a parse token of the type PtgBool with a value of **TRUE** if **Token** is a PtgErr; otherwise, the value **FALSE** is returned.

#### IsErrValue

The **IsErrValue** function calculates if the operand is a parse token of the type [PtgErr](#Section_93a276b0294d468587050798f619a88d) with an error code equal to #VALUE!.

**ABNF:**

1. IsErrValue = "ISERRVALUE(" val ")"

**Required Arguments:**

*Name:* **Token**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a parse token of the type PtgBool with a value of **TRUE**, if **Token** is a PtgErr and the value of **Token** is equal to #VALUE!; otherwise, the value **FALSE** is returned.

#### IsThemed

The **IsThemed** function returns whether the [shape](#Section_2995871af1b144e69754989fb760ee18) has a [theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) applied.

**ABNF:**

1. IsThemed = "ISTHEMED()"

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a parse token of the type PtgBool with the value of **FALSE** if any of the following cells on the shape has a value equal to zero: [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4), [EffectSchemeIndex](#Section_2117ea2ac6e941d0a6a86b46d9042ae6), [ConnectorSchemeIndex](#Section_9753d977a1de49e8888ccf532efe7982), or [FontSchemeIndex](#Section_9d9c7fe007aa4245864799073a835ebc). Otherwise, it returns a PtgBool with the value of **TRUE**.

#### Keywords

The **Keywords** function returns the **Keyword** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Keyword = "KEYWORD()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Keyword** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### Language

The **Language** function converts the operand from a [**culture name**](#gt_b43d5a25-2069-42c0-bb00-b2b70accebac) or an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to an implementation-specific language identifier.

**ABNF:**

1. Language = "LANGUAGE(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vLanguage](#Section_ea7687916bc347dcb670ca9f90b1ce24)

An argument that specifies the language.

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns a parse token of the type PtgInt which uniquely identifies a language in the [vLanguageString](#Section_f91b1356cff14c718a04247007cbe4c9) custom structure table. The value is specific to the implementation.

#### Left

The **Left** function returns a string containing the first character or characters in a string.

**ABNF:**

1. Left = "LEFT(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **Text**

*Type:*  [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string.

**Optional Arguments:**

*Name*: **NumChars**

*Type*: [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44)

An argument that specifies the number of characters to be returned. The default value is one.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a parse token of the type PtgString containing the first **NumChars** characters of **Text**.

If **NumChars** is less than zero or greater than the number of characters in **Text**, the function returns a PtgString containing **Text**.

If **NumChars** is equal to zero, the function returns a PtgString containing an empty string.

#### Len

The **Len** function performs a calculation of the length of a string.

**ABNF:**

1. Len = "LEN(" val ")"

**Required Arguments:**

*Name:* **Text**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the number of characters in **Text**.

#### Ln

The **Ln** function performs a natural logarithm calculation.

**ABNF:**

1. Ln = "LN(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [[vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)](#Section_25d21d600457404d90f42e5ae1c55682), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a custom token grouping of the type vNum containing the natural logarithm of **Arg1**. The unit of the return value is equal to the unit of **Arg1**. If **Arg1** is less than or equal to zero, the function returns a PtgErr parse token with an error code equal to #NUM!.

#### Loc

The **Loc** function performs a transformation of a point from the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of another [shape](#Section_2995871af1b144e69754989fb760ee18) into the coordinate system of the shape associated with the formula.

**ABNF:**

1. Loc = "LOC(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

An argument that specifies a point in the coordinate system of a shape.

**Return Value:**

*Type:* PtgPnt

This function transforms the point value of **Arg1** in the coordinate system of the shape associated with **Arg1** into an equivalent point in the coordinate system of the shape associated with the formula and returns the transformed point. If the shape associated with the formula and the shape associated with **Arg1** are not on the same [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), the function returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #VALUE!.

#### LocalFormulaExists

The **LocalFormulaExists** function returns whether a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) contains a formula that is not [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb).

**ABNF:**

1. LocalFormulaExists = "LOCALFORMULAEXISTS(" val ")"

**Required Arguments:**

*Name:* Arg1

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a cell in a [shape](#Section_2995871af1b144e69754989fb760ee18).

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with the value of **TRUE** if the cell contains a formula and that formula is not inherited. Otherwise, it returns a PtgBool with the value of **FALSE**.

#### LocToLoc

The **LocToLoc** function performs a transformation of a point from the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of one [shape](#Section_2995871af1b144e69754989fb760ee18) into the coordinate system of another shape.

**ABNF:**

1. LocToLoc = "LOCTOLOC(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Point**

*Type:* [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

An argument that specifies a point.

*Name:* **Source**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a source shape.

*Name:* **Destination**

*Type:* CellRef

An argument that specifies a reference to a cell in a destination shape.

**Return Value:**

*Type:* PtgPnt

This function returns a transformed point in the coordinate system of the shape of **Destination** from the value of **Point** in a coordinate system of the shape of **Source**. If the **Source** shape and **Destination** shape are not on the same [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), the function returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #VALUE!.

#### LocToPar

The **LocToPar** function performs a transformation of a point from the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of one [shape](#Section_2995871af1b144e69754989fb760ee18) into the coordinate system of the parent of another shape.

**ABNF:**

1. LocToPar = "LOCTOPAR(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Point**

*Type:* [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

An argument that specifies a point.

*Name:* **Source**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a source shape.

*Name:* **Destination**

*Type:* CellRef

An argument that specifies a reference to a cell in a destination shape.

**Return Value:**

*Type:* PtgPnt

This function returns a transformed point in the coordinate system of the parent [sheet](#Section_fd48786aaeee44ce84b100884dc31200) of the shape of **Destination** from the value of **Point** in the coordinate system of the shape of **Source**. If the **Source’s** shape and **Destination’s** shape are not on the same [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), the function returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) with an error code equal to #VALUE!.

#### Log10

The **Log10** function performs a base 10 logarithm calculation.

**ABNF:**

1. Log10 = "LOG10(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a custom token grouping of the type vNum containing the base 10 logarithm of **Arg1**. The unit of the return value is equal to the unit of **Arg1**. If the value of **Arg1** is less than or equal to zero, the function returns a PtgErr parse token with an error code equal to #NUM!.

#### Lookup

The **Lookup** function returns the index of a substring in a list of substrings.

**ABNF:**

1. Lookup = "LOOKUP(" val "," val [ "," [ val ]] ")"

**Required Arguments:**

*Name:* **Substring**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies the substring to find.

*Name:* **List**

*Type:* vString

An argument that specifies a string consisting of a list of substrings delimited by **Delimiter**. Consecutive delimiters or delimiters at the beginning and/or end of **List** specify empty substrings.

**Optional Arguments:**

*Name*: **Delimiter**

*Type*: vString

An argument that specifies the delimiter that separates substrings inside **List** with a default value of ";", if missing.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a parse token of the type PtgNum containing the [**zero-based index**](#gt_bc60c405-d92b-4a8c-b63b-e404b1cc4dc4) location of the substring in **List** that matches **Substring**. The leading and trailing spaces of substrings in **List** are ignored for the comparison. If **Substring** contains **Delimiter** or if **Substring** is not found in **List**, the function returns a PtgNum containing a value of -1.

The comparison is performed according to .NET globalization rules based on the value specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

#### Lower

The **Lower** function performs lower case conversion.

**ABNF:**

1. Lower = "LOWER(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies the string to convert.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a parse token of the type PtgString containing the string converted to lower case. The conversion is performed according to .NET globalization rules based on the value specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

#### Lum

The **Lum** function calculates a luminance component, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), of a color value.

**ABNF:**

1. Lum = "LUM(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the color.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the luminance of **Arg1**. The value is less than or equal to 240.

#### LumDiff

The **LumDiff** function calculates the difference in luminance, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), between two color values.

**ABNF:**

1. LumDiff = "LUMDIFF(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the first color.

*Name:* **Arg2**

*Type:* vColor

An argument that specifies the second color.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing a value that is equal to the luminance of **Arg1** minus the luminance of **Arg2**. This value is greater than or equal to -240 and less than or equal to 240.

#### Magnitude

The **Magnitude** function performs a magnitude calculation of a vector.

**ABNF:**

1. Magnitude = "MAGNITUDE(" val "," val "," val "," val ")"

**Required Arguments:**

*Name:* **ConstantRise**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the constant factor for the rise.

*Name:* **Rise**

*Type:* vDouble

An argument that specifies a rise of the vector.

*Name:* **ConstantRun**

*Type:* vDouble

An argument that specifies a constant factor for the run.

*Name:* **Run**

*Type:* vDouble

An argument that specifies a run of the vector.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

The function returns a PtgNum parse token containing the calculated magnitude. The magnitude calculation is performed using the following formula:

SQRT( (ConstantRise\*Rise)^2 + (ConstantRun\*Run)^2) )

If **Rise** or **Run** is a [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) parse token, the function returns a PtgErr parse token with an error code equal to #DIM!.

#### Manager

The **Manager** function returns the **Manager** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Manager = "MANAGER()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Manager** property, specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 22.2.2.15, from the [App XML part](#Section_85e85f4058134276aed798b4d83506d0) of a web drawing.

#### MasterName

The **MasterName** function returns the name of the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) of a [shape](#Section_2995871af1b144e69754989fb760ee18).

**ABNF:**

1. MasterName = [ShapeSheetRef "!"] "MASTERNAME(" [ val ] ")"

**Optional Arguments:**

*Name:* **Arg1**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

An argument to specify the language of the return value.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns the name of the master of a shape in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) or reference context specified by a [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470) reference token.

If the value of **Arg1** is 750, the **NameU** attribute of the [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element associated with the master is returned.

If the value of **Arg1** is not 750, the **Name** attribute of the Master\_Type element associated with the master is returned.

If the shape does not have a master and the value of **Arg1** is 750, the string "<no master>" is returned.

If the shape does not have a master and the value of **Arg1** is not 750, language-dependent translation of the string "<no master>" is returned.

#### Max

The **Max** function performs a search for the largest number from a list of operands.

**ABNF:**

1. Max = "MAX(" val \*("," val) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand.

**Optional Arguments:**

Zero or more operands of type vDouble.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a vNum custom token grouping containing the first occurrence of the largest operand. The unit of the return value is equal to the unit of that operand.

#### Mid

The **Mid** function returns part of a string, starting at the position specified, based on the number of characters specified.

**ABNF:**

1. Mid = "MID(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Text**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a text string.

*Name:* **StartPos**

*Type:* [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44)

An argument that specifies the one-based index in **Text** which represents the beginning of a substring to be returned.

*Name:* **NumChars**

*Type:* vSignedLong

An argument that specifies the number of characters to be returned.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgString parse token containing a substring of **Text**, starting from **StartPos** up to the character at **StartPos** plus **NumChars** -1. If **StartPos** is zero, the function returns a PtgErr parse token with an error code equal to #VALUE!. If **StartPos** is less than zero or greater than the number of characters in **Text**, the function returns a PtgString containing an empty string. If **StartPos** plus **NumChars** -1 exceeds the length of **Text**,or if **NumChars** is less than zero, the function returns a PtgString containing the substring of **Text** starting from **StartPos** up to the end of **Text**.

#### Min

The **Min** function performs a search for the smallest number from a list of operands.

**ABNF:**

1. Min = "MIN(" val \*("," val) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand.

**Optional Arguments:**

Zero or more operands of type vDouble.

**Return Value:**

*Type:* [[vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)](#Section_25d21d600457404d90f42e5ae1c55682)

This function returns a vNum custom token grouping containing the first occurrence of the smallest operand. The unit of the return value is equal to the unit of that operand.

#### Minute

The **Minute** function returns a minute from a value representing a date and time.

**ABNF:**

1. Minute = "MINUTE(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the minute component from **DateTimeArg.** If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Modulus

The **Modulus** function performs a modulus calculation.

**ABNF:**

1. Modulus = "MODULUS(" val "," val ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies a number to be divided by **Divisor**.

*Name:* **Divisor**

*Type:* [vFloat](#Section_91b47f1c6d1441fca31a1019497abaa7)

An argument that specifies the divisor of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a vNum custom token grouping containing the remainder when **Number** is divided by **Divisor**. If **Number** is a vNum, the unit of the return value is equal to the unit of **Number**; otherwise, the function returns a [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) parse token. If **Divisor** is zero, the function returns a PtgErr parse token with an error code equal to #DIV/0.

#### Month

The **Month** function returns a month, according to the Gregorian calendar, from a value representing a date and time.

**ABNF:**

1. Month = "MONTH(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the month component from **DateTimeArg**. If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### MsoShade

The **MsoShade** function performs a modification to a color by decreasing the luminance component, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), by a percentage.

**ABNF:**

1. MsoShade = "MSOSHADE(" val "," val ")"

**Required Arguments:**

*Name:* **Color**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies a color.

*Name:* **Delta**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies the percentage to decrease the luminance of **Color**. If the value is less than zero, the luminance is increased.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing the shaded color. If **Delta** is greater than zero, the luminance of **Color** is decreased by the percentage specified by the absolute value of **Delta**. If **Delta** is less than zero, the luminance of **Color** is increased by the following amount: the percentage specified by **Delta** multiplied by the result of 240 minus the luminance of **Color**. If **Delta** is less than -100, the function sets the value to -100 and performs the operation. If **Delta** is greater than 100, the function sets the value to 100 and performs the operation.

#### MsoTint

The **MsoTint** function modifies a color by increasing the luminance component, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), by a percentage.

**ABNF:**

1. MsoTint = "MSOTINT(" val "," val ")"

**Required Arguments:**

*Name:* **Color**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies a color.

*Name:* **Delta**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies the percentage to increase the luminance of **Color**. If the value is less than zero, the luminance is decreased.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing the tinted color. If **Delta** is greater than zero, the luminance of **Color** is increased by the following amount: the percentage specified by **Delta** multiplied by the result of 240 minus the luminance of **Color**. If **Delta** is less than zero, the luminance of **Color** is decreased by the percentage specified by the absolute value of **Delta**. If **Delta** is less than -100, the function sets the value to -100 and performs the operation. If **Delta** is greater than 100, the function sets the value to 100 and performs the operation.

#### Mul

The **Mul** function performs a multiplication calculation.

**ABNF:**

1. Mul = "\_MUL(" val "," val ")" / val "\*" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDoubleEx](#Section_311bb3d6a0404a929b29e51641563a9c)

An argument that specifies the first operand of the multiplication operation.

*Name:* **Arg2**

*Type:* vDoubleEx

An argument that specifies the second operand of the multiplication operation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a custom token grouping of the type **vNum** (section 2.5.7.4) or a **PtgCy** parse token (section 2.5.4.9) containing **Arg1** multiplied by **Arg2**. The type of the return value is by the following algorithm.

1. SET return type = PtgNum
2. SET returnDimension = 0
3. SET returnCurrencyID = 0
4. IF Arg1.Type = PtgCy AND Arg2.Type != PtgCy THEN
5. SET returnType = PtgCy
6. SET returnCurrencyID = currencyID of Arg1
7. ELSE IF Arg1.Type != PtgCy AND Arg2.Type = PtgCy THEN
8. SET returnType = PtgCy
9. SET returnCurrencyID = currencyID of Arg2
10. ELSE IF Arg1.Type = PtgCy AND Arg2.Type = PtgCy THEN
11. SET returnType = PtgCy
12. IF currencyID of Arg1 = currencyID of Arg2 OR currencyID of Arg2 = 1 THEN
13. SET returnCurrencyID = currencyID of Arg1
14. ELSE IF currencyID of Arg1 = 1 THEN
15. SET returnCurrencyID = currencyID of Arg2
16. ELSE
17. SET returnType = PtgErr
18. END IF
19. ELSE IF Arg1.Unit = PtgNumPct AND Arg2.Unit = PtgNumPct
20. SET returnType = PtgNumPct
21. SET returnDimension = 1
22. ELSE IF Arg1.Unit = PtgNumPct
23. SET returnType = PtgNumPct
24. SET returnDimension = Arg2.dimension
25. ELSE IF Arg2.Unit = PtgNumPct
26. IF Arg1.Unit is a vUnitType
27. SET returnType = Arg1.Unit
28. SET returnDimension = Arg1.Dimension
29. ELSE
30. SET returnType = Arg2.Unit
31. SET returnDimension = Arg1.Dimension
32. END IF
33. ELSE IF Arg1.Unit is a vUnitType THEN
34. SET returnType = Arg1.Unit
35. SET returnDimension = Arg1.Dimension + Arg2.Dimension
36. ELSE IF Arg2.Unit is a vUnitType THEN
37. SET returnType = Arg2.Unit
38. SET returnDimension = Arg1.Dimension + Arg2.Dimension
39. END IF
40. IF returnType = PtgCy THEN
41. Return type is PtgCy with currencyID = returnCurrencyID
42. ELSE IF returnType = PtgErr THEN
43. Return type is PtgErr with error code of #VALUE!
44. ELSE IF (returnType = PtgAcre OR returnType = PtgHectare) AND returnDimension != 2 THEN
45. Return type is PtgNumMultiDim with unit = PtgNumDft and dimension = returnDimension
46. ELSE IF returnDimension = 0 THEN
47. Return type is PtgNum
48. ELSE IF returnDimension = 1 THEN
49. Return type is returnType
50. ELSE
51. Return type is PtgNumMultiDim with unit = returnType and dimension = returnDimension
52. END IF

#### NA

The **NA** function returns the error code #N/A.

**ABNF:**

1. NA = "NA()"

**Return Value:**

*Type:* [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgErr parse token with the error code equal to #N/A.

#### Name

The **Name** function returns a name of a [shape](#Section_2995871af1b144e69754989fb760ee18) or style.

**ABNF:**

1. Name = [ (ShapeSheetRef / StyleSheetRef) "!"] "NAME(" [ val ] ")"

**Optional Arguments:**

*Name:* **Arg1**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

An argument to specify the language of the return value.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns the name of the shape or style in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) or reference context specified by [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470) or [StyleSheetRef](#Section_500ba523e86b4d2e853771726409e2ba).

If the value of **Arg1** is 750, the **NameU** attribute of the [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element or [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) element associated with the shape or style is returned.

If the value of **Arg1** is not 750, the **Name** attribute of the ShapeSheet\_Type element or StyleSheet\_Type element associated with the shape or style is returned.

#### Not

The **Not** function performs the Boolean NOT operation.

**ABNF:**

1. Not = "NOT(" val ")"

**Required Arguments:**

*Name:* **Value**

*Type:* [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument that specifies an operand.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token containing the value of the Boolean NOT operation on **Value**.

#### Now

The **Now** function returns the current date and time.

**ABNF:**

1. Now = "NOW()"

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)

This function returns a PtgDate parse token containing the value of current date and time.

#### Nurbs

The **Nurbs** function returns a non-uniform rational B-spline (NURBS).

**ABNF:**

1. Nurbs = "NURBS(" val "," val "," val "," val \*("," val "," val "," val "," val) ")"

**Required Arguments:**

*Name:* **knotLast**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the last knot.

*Name:* **degree**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies the degree of the B-spline.

*Name:* **xType**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies how to interpret the x-coordinates. If **xType** is zero, the input **xN** is interpreted as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). Otherwise, the input **xN** is interpreted in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18).

*Name:* **yType**

*Type:* vUnsignedInt

An argument that specifies how to interpret the y-coordinates. If **yType** is zero, the input **yN** is interpreted as relative coordinates. Otherwise, the input **yN** is interpreted in the coordinate system of the shape.

**Optional Arguments:**

Additional x-coordinates, y-coordinates, knots, and weights MUST be specified using additional groups of **xN**, **yN**, **knotN**, and **weightN**.

*Name:* **xN**

*Type:* vDouble

An argument that specifies a x-coordinate.

*Name:* **yN**

*Type:* vDouble

An argument that specifies a y-coordinate.

*Name:* **knotN**

*Type:* vDouble

An argument that specifies a knot on the B-spline.

*Name:* **weightN**

*Type:* vDouble

An argument that specifies a weight on the B-spline.

**Return Value:**

*Type:* [PtgNurbs](#Section_28741816c5ba4ee6a73801938ff478c4), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgNurbs parse token containing **knotLast**, **degree**, **xType**, **yType**, **xN**, **yN**, **knotN**, and **weightN**. If the wrong number of arguments is used, the function returns a PtgErr parse token with a value equal to #VALUE!.

#### Or

The **Or** function returns a Boolean value.

**ABNF:**

1. Or = "OR(" val \*( "," val ) ")"

**Required Arguments:**

*Name:* **Args**

*Type:* [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

A set of arguments that specifies an operand of the calculation.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE** if any of the arguments are equal to **TRUE**; otherwise, the value of **FALSE** is returned.

#### PageCount

The **PageCount** function returns a count of the number of [foreground drawing pages](#Section_2b3a03240644467fb822f24e28fa5d11) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. PageCount = "PAGECOUNT()"

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

The number of foreground drawing pages in a web drawing.

#### PageName

The **PageName** function returns a name of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

**ABNF:**

1. PageName = [ (CrossPageRef / PageSheetRef) "!"] "PAGENAME(" [ val ] ")"

**Optional Arguments:**

*Name:* **Arg1**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

An argument to specify the language of the return value.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns the name of the drawing page in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) or reference context specified by [CrossPageRef](#Section_47586acdcb584444a4b7f813f7fedaca) or [PageSheetRef](#Section_5837d1f1d2f346f283d778f8d8bb725c).

If the value of **Arg1** is 750, the **NameU** attribute of the [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element associated with the drawing page is returned.

If the value of **Arg1** is not 750, the **Name** attribute of the Page\_Type element associated with the drawing page is returned.

If the function is called from outside the context of a page, an empty string is returned.

#### PageNumber

The **PageNumber** function returns an index of a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b).

**ABNF:**

1. PageNumber = "PAGENUMBER()"

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns an index of the drawing page.

If the drawing page is a [background page](#Section_87f5433c7da245f4936b57cad345a301) or if the function is called outside of a page context, zero is returned.

#### Par

The **Par** function performs a transformation of a point from the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of another [shape](#Section_2995871af1b144e69754989fb760ee18) into the coordinate system of the [parent](#Section_901ceba559e64aba90342042efc1d354) of the shape associated with the formula.

**ABNF:**

1. Par = "PAR(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

An argument that specifies a point in the coordinate system of a shape.

**Return Value:**

*Type:* PtgPnt

This function transforms a point value of **Arg1** in the coordinate system of the shape associated with **Arg1** into an equivalent point in the coordinate system of the parent [sheet](#Section_fd48786aaeee44ce84b100884dc31200) of the shape associated with the formula. If the shape associated with the formula and the shape associated with the **Arg1** are not on the same [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b), the function returns a [PtgErr](#Section_93a276b0294d468587050798f619a88d) parse token with an error code equal to #VALUE!.

#### Pct

The **Pct** function performs a percent conversion on the operand.

**ABNF:**

1. Pct = "\_PCT(" val ")"

**Required Arguments:**

*Name:* **Value**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an operand that will be converted to a percent.

**Return Value:**

*Type:* [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af)

This function returns a PtgNumPct parse token containing **Value** / 100.

#### Pi

The **Pi** function returns the mathematical constant pi.

**ABNF:**

1. Pi = "PI()"

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the value of the mathematical constant pi.

#### Pnt

The **Pnt** function returns a point in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of a [shape](#Section_2995871af1b144e69754989fb760ee18).

**ABNF:**

1. Pnt = "PNT(" val "," val ")"

**Required Arguments:**

*Name:* **X**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the x-coordinate of the point.

*Name:* **Y**

*Type:* vDouble

An argument that specifies the y-coordinate of the point**.**

**Return Value:**

*Type:* [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

This function returns a PtgPnt parse token containing the value of **X** and **Y** as coordinates. If **X** or **Y** is a [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd), the function returns a PtgPnt parse token containing the value of **X**, **Y**, and the shape specified by the CellRef.

#### Pntx

The **Pntx** function returns a value of the x-coordinate of a point.

**ABNF:**

1. PntX = "PNTX(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

An argument that specifies a point.

**Return Value:**

*Type:* vNum

If **Arg1** is a PtgPnt parse token, this function returns a custom token grouping of the type vNum with the value of the x-coordinate of the point. If **Arg1** is a vNum, the function returns **Arg1**.

#### PntY

The **PntY** function returns a value of a y-coordinate of a point.

**ABNF:**

1. PntY = "PNTY(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8)

An argument that specifies a point.

**Return Value:**

*Type:* vNum

If **Arg1** is a PtgPnt parse token, this function returns a custom token grouping of the type vNum with the value of the y-coordinate of the point. If **Arg1** is a vNum, the function returns **Arg1**.

#### PolyLine

The **PolyLine** function returns a polyline.

**ABNF:**

1. Polyline = "POLYLINE(" val "," val \*("," val "," val) ")"

**Required Arguments:**

*Name:* **xType**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies how to interpret the x-coordinates. If **xType** is zero, the input **xN** is interpreted as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). Otherwise, the input **xN** is interpreted in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18).

*Name:* **yType**

*Type:* vUnsignedInt

An argument that specifies how to interpret the y-coordinates. If **yType** is zero, the input **yN** is interpreted as relative coordinates. Otherwise, the input **yN** is interpreted in the coordinate system of the shape.

**Optional Arguments:**

Additional x and y-coordinates MUST be specified using additional pairs of **xN** and **yN**.

*Name:* **xN**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an x-coordinate.

*Name:* **yN**

*Type:* vDouble

An argument that specifies a y-coordinate.

**Return Value:**

*Type:* [PtgPolyline](#Section_ca51a3f3efbc40ff844b7c54730e31c9), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgPolyline parse token containing **xType**, **yType, xN**, and **yN**. If the wrong number of arguments are used, the function returns a PtgErr parse token with a value equal to #VALUE!.

#### Pow

The **Pow** function performs an exponentiation calculation.

**ABNF:**

1. Pow = "POW(" val "," val ")" / val "^" val

**Required Arguments:**

*Name:* **Base**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies a number to be raised to the power of **Exponent**.

*Name:* **Exponent**

*Type:* vDouble

An argument that specifies an exponent by which to raise **Base***.*

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns the custom token grouping vNum (section 2.5.7.4) or PtgErr parse token (section 2.5.4.14) containing Base raised to the power of Exponent. The type of the return value is calculated by the following algorithm.

1. SET returnType = PtgNum
2. SET returnError = #NUM!
3. SET returnDimension = 0
4. IF Base.Value = 0 THEN
5. IF Exponent.Value = 0 THEN
6. SET returnType = PtgErr
7. SET returnError = #NUM!
8. ELSE IF Exponent.Value < 0 THEN
9. SET returnType = PtgErr
10. SET returnError = #DIV/0
11. END IF
12. ELSE IF Base.Value < 0 AND Exponent is not an integer THEN
13. SET returnType = PtgErr
14. SET returnError = #DIM!
15. ELSE IF Base.Unit = PtgNumPct THEN
16. SET returnType = PtgNumPct
17. SET returnDimension = 1
18. ELSE
19. SET returnType = Base.Unit
20. SET returnDimension = Base.Dimension \* Exponent.Value
21. END IF
22. IF returnType = PtgErr THEN
23. Return type is PtgErr with error code of returnError
24. ELSE IF returnDimension = 0 THEN
25. Return type is PtgNum
26. ELSE IF returnDimension = 1 THEN
27. Return type is returnType
28. ELSE
29. Return type is PtgNumMultiDim with unit = returnType and dimension = returnDimension
30. END IF

#### Rad

The **Rad** function converts a value to an angle in radians.

**ABNF:**

1. Rad = "RAD(" val ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies an angle.

**Return Value:**

*Type:* [PtgAngRad](#Section_992d1e2bd40941a08b49675a67496aad)

This function returns a parse token of the type PtgAngRad. If **Angle** is a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping, the value is equal to the value of **Angle**. Otherwise, **Angle** is interpreted as an angle in degrees and the return value is equal to:

pi / 180.0 \* value of **Angle**

#### Rand

The **Rand** function generates a random number.

**ABNF:**

1. Rand = "RAND()"

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing a random double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) greater than or equal to 0.0 and less than 1.0.

#### Ref

The **Ref** function returns an error code #REF!.

**ABNF:**

1. Ref = "REF()"

**Return Value:**

*Type:* [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgErr parse token with the error code equal to #REF!.

#### Replace

The **Replace** function replaces part of a text string with another text string.

**ABNF:**

1. Replace = "REPLACE(" val "," val "," val "," val ")"

**Required Arguments:**

*Name:* **SourceText**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string to perform replacement on.

*Name:* **StartPos**

*Type:* [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44)

An argument that specifies the one-based starting position in **SourceText** where replacement begins.

*Name:* **NumChars**

*Type:* vSignedLong

An argument that specifies the number of characters in **SourceText** to be replaced by **ReplaceText**.

*Name:* **ReplaceText**

*Type:* vString

An argument that specifies a string to use for replacement.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgString parse token containing **SourceText** modified with the replaced text. If **StartPos** is less than or equal to zero or greater than the number of characters in **SourceText**, the function returns a PtgString containing **SourceText** with **ReplaceText** appended at the end. If **StartPos** plus **NumChars** -1 exceeds the length of **SourceText**,orif **NumChars** is less than zero, the function returns a PtgString containing **SourceText** truncated starting from **StartPos** and with **ReplaceText** appended at the end.

#### RGB

The **RGB** function calculates an [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color value as a combination of red, green and blue components.

**ABNF:**

1. RGB = "RGB(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Red**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies the intensity of red.

*Name:* **Green**

*Type:* vUnsignedInt

An argument that specifies the intensity of green.

*Name:* **Blue**

*Type:* vUnsignedInt

An argument that specifies the intensity of blue.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing a color value. The byte that specifies red in the PtgColorRGB is equal to **Red**. The byte that specifies green in the PtgColorRGB is equal to **Green**. The byte that specifies blue in the PtgColorRGB is equal to **Blue**. If the value of any of the arguments is greater than 0xFF, the function sets the argument’s value to the result of the bitwise AND operation between the original value and 0xFF, before performing the operation.

#### Right

The **Right** function returns a string containing the last character or characters in a string.

**ABNF:**

1. Right = "RIGHT(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **Text**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string.

**Optional Arguments:**

Name: **NumChars**

Type: [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44)

An argument that specifies the number of characters to be returned. The default value is one.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a PtgString parse token containing the last **NumChars** characters of **Text**.

If **NumChars** is less than zero or greater than the number of characters in **Text**, the function returns a PtgString containing **Text**.

If **NumChars** is equal to zero, the function returns a PtgString containing an empty string.

#### Round

The **Round** function performs a rounding calculation.

**ABNF:**

Round = "ROUND(" val "," val ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies a number to round.

*Name:* **Digits**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies the decimal place to use for the rounding operation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a vNum custom token grouping containing the rounded value of **Number**, as described by the following table.

| Condition | Return value |
| --- | --- |
| **Digits** > 0 | The function returns **Number** rounded to **Digits** places to the right of the decimal point. |
| **Digits** = 0 | The function returns **Number** rounded to an integer. |
| **Digits** < 0 | The function returns **Number** rounded to negative **Digits** places to the left of the decimal point. |

The unit of the return value is equal to the unit of **Number**. If **Digits** is less than or equal to -9 or greater than 15, the function returns **Number**.

#### Sat

The **Sat** function calculates the saturation component, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), of a color value.

**ABNF:**

1. Sat = "SAT(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the color.

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62)

This function returns a PtgNum parse token containing the saturation of **Arg1**. The value is less than or equal to 240.

#### SatDiff

The **SatDiff** function calculates the difference in saturation, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), between two color values.

**ABNF:**

1. SatDiff = "SATDIFF(" val "," val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies the first color.

*Name:* **Arg2**

*Type:* vColor

An argument that specifies the second color.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing a value that is equal to the saturation of **Arg1** minus the saturation of **Arg2**. This value is greater than or equal to -240 and less than or equal to 240.

#### Second

The **Second** function returns the second component from a value representing a date and time.

**ABNF:**

1. Second = "SECOND(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the second component from **DateTimeArg.** If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### SetAtRef

The **SetAtRef** function returns the value of a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a).

**ABNF:**

1. SetAtRef = "SETATREF(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a cell.

**Return Value:**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

This function returns the value of the cell referenced by **Arg1**.

#### SetAtRefEval

The **SetAtRefEval** function returns the value of the passed argument.

**ABNF:**

1. SetAtRefEval = "SETATREFEVAL(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument to be returned.

**Return Value:**

*Type:* vAny

This function returns the value of **Arg1**.

#### SetAtRefExpr

The **SetAtRefExpr** function returns the value of the passed argument.

**ABNF:**

1. SetAtRefExpr = "SETATREFEXPR(" [ val ] ")"

**Optional Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument to be returned. The default value is a [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62) parse token with a value of zero.

**Return Value:**

*Type:* vAny

This function returns the value of **Arg1**.

#### Shade

The **Shade** function decreases the luminance, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), of a color value.

**ABNF:**

1. Shade = "SHADE(" val "," val ")"

**Required Arguments:**

*Name:* **Color**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies a color.

*Name:* **Delta**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies an amount to modify the luminance of **Color**.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing a color value with decreased luminance. If **Delta** is less than zero, the luminance is increased.

#### ShapeText

The **ShapeText** function returns the [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) of a specified [shape](#Section_2995871af1b144e69754989fb760ee18).

**ABNF:**

1. ShapeText = "SHAPETEXT"( val [ "," val ] ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

This argument references a [TheText](#Section_1c16e63e2d304c3a96c9a423f07afa0f) [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a).

**Optional Arguments:**

*Name:* **Arg2**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

This argument specifies the operations to perform on the text.

The value is zero or a combination of values from this table.

| Value | Meaning |
| --- | --- |
| 0x01 | Include discretionary hyphens. |
| 0x02 | Don’t include expanded text from fields. |
| 0x04 | Convert tabs to a single space. |
| 0x08 | Convert tabs to spaces. |
| 0x10 | Convert CR and LF to spaces. |
| 0x20 | Convert typographer’s quotes to straight quotes. |
| 0x40 | Convert contiguous [**whitespace**](#gt_d812ae04-029d-4f94-b205-962d2142a117) into a single space. |

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

The function returns a PtgString parse token. If the value of **Arg1** is a TheText cell of a [sheet](#Section_fd48786aaeee44ce84b100884dc31200), this function returns the text from the shape after specified operations are applied. Otherwise, this function returns an empty string.

#### Sign

The **Sign** function returns the sign of a number.

**ABNF:**

1. Sign = "SIGN(" val ["," val] ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Optional Arguments:**

*Name:* **FuzzValue**

*Type:* vDouble

An argument that specifies the tolerance. The default value is 1E-9 (0.000000001).

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns a PtgInt parse token representing the sign of **Number**. If **Number** is greater than the absolute value of **FuzzValue**, the function returns one. If **Number** is less than the negative of the absolute value of **FuzzValue**, the function returns -1; otherwise, the function returns zero.

#### Sin

The **Sin** function performs a sine calculation.

**ABNF:**

1. Sin = "SIN(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation. If **Arg1** is not a custom token grouping of the type [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b), the value of **Arg1** is assumed to have the unit of radians.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the sine of **Arg1**.

#### SinH

The **SinH** function performs a hyperbolic sine calculation.

**ABNF:**

1. SinH = "SINH(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation. If **Arg1** is not a custom token grouping of the type [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b), the value of **Arg1** is assumed to have the unit of radians.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the hyperbolic sine of **Arg1**.

#### Sqrt

The **Sqrt** function performs a square root calculation.

**ABNF:**

1. Sqrt = "SQRT(" val ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a vNum custom token grouping containing the square root of **Number**. The unit of the return value is equal to the unit of **Number**. If the dimension of **Number** is greater than two, the function returns a [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) parse token with value equal to the square root of **Number**, unit equal to the unit of **Number**, and dimension equal to the dimension of **Number** divided by two. If **Number** is less than zero, the function returns a PtgErr parse token with an error code equal to #NUM!. If the dimension of **Number** is not divisible by two, the function returns a PtgErr with an error code equal to #DIM!.

#### StrSame

The **StrSame** function determines whether two strings are equivalent.

**ABNF:**

1. StrSame = "STRSAME(" val "," val ["," val] ")"

**Required Arguments:**

*Name:* **FirstString**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies the first string to be compared.

*Name:* **SecondString**

*Type:* vString

An argument that specifies the second string to be compared.

**Optional Arguments:**

*Name*: **IgnoreCase**

*Type*: [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument that specifies whether the comparison is case insensitive. A value of **TRUE** indicates that case is ignored; otherwise, the default value is **FALSE**.

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token with a value of **TRUE,** if the strings are equivalent; otherwise, the value of **FALSE** is returned. The comparison is performed according to .NET globalization rules based on the value specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

#### StrSameEx

The **StrSameEx** function determines whether two text strings are the same.

**ABNF:**

1. StrSameEx = "STRSAMEEX(" val "," val "," val "," val ")"

**Required Arguments:**

*Name:* **FirstText**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies the first string to be compared.

*Name:* **SecondText**

*Type:* vString

An argument that specifies the second string to be compared.

*Name:* **Locale**

*Type:*  [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies the [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) of the culture used by the string comparison, according to .Net globalization rules. A value of zero specifies the invariant culture. For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

*Name:* **Flag**

*Type:* [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44)

An argument that specifies additional rules to be used in the comparison. The value is a combination of values from the following table. The rules given in the following table correspond to members of the .NET CompareOptions enumeration, as described in [[MSDN-CompareOptions]](https://go.microsoft.com/fwlink/?LinkId=180505).

| Value | Meaning |
| --- | --- |
| 0x00 | No additional rules apply. |
| 0x01 | Ignore case. |
| 0x02 | Ignore non-spacing combining characters. |
| 0x04 | Ignore symbols and punctuation. |
| 0x10000 | Ignore differences between hiragana and katakana characters that represent the same phonetic sound. |
| 0x20000 | Ignore character width, or differences between the single-byte and double-byte representations of the same character. |

**Return Value:**

*Type:* [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

This function returns a PtgBool parse token containing **TRUE**, if the strings are the same. If the strings are not the same or if the **Locale** or **Flag** arguments are not valid, this function returns a PtgBool containing a value of **FALSE**.

#### Sub

The **Sub** function performs a subtraction calculation.

**ABNF:**

1. Sub = "\_SUB(" val "," val ")" / val "-" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDoubleEx](#Section_311bb3d6a0404a929b29e51641563a9c)

An argument that specifies the first operand of the calculation.

*Name:* **Arg2**

*Type:* vDoubleEx

An argument that specifies the second operand of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a custom token grouping of the type **vNum** (section 2.5.7.4) or a **PtgCy** parse token (section 2.5.4.9) containing **Arg1** minus **Arg2**. The type of the return value is calculated by the following algorithm.

1. SET returnType = PtgNum
2. SET returnDimension = 0
3. SET returnCurrencyID = 0
4. IF Arg1.Type = PtgCy AND Arg2.Type != PtgCy THEN
5. SET returnType = PtgCy
6. SET returnCurrencyID = currencyID of Arg1
7. ELSE IF Arg1.Type != PtgCy AND Arg2.Type = PtgCy THEN
8. SET returnType = PtgCy
9. SET returnCurrencyID = currencyID of Arg2
10. ELSE IF Arg1.Type = PtgCy AND Arg2.Type = PtgCy THEN
11. SET returnType = PtgCy
12. IF currencyID of Arg1 = currencyID of Arg2 OR currencyID of Arg2 = 1 THEN
13. SET returnCurrencyID = currencyID of Arg1
14. ELSE IF currencyID of Arg1 = 1 THEN
15. SET returnCurrencyID = currencyID of Arg2
16. ELSE
17. SET returnType = PtgErr
18. END IF
19. ELSE IF Arg1.Type = PtgDate AND Arg2.Type = PtgDate THEN
20. SET returnType = PtgTDurDft
21. SET returnDimension = 1
22. ELSE IF Arg1.Unit = PtgNumDft AND Arg2.Unit is a vUnitType THEN
23. SET returnType = Arg2.Unit
24. SET returnDimension = 1
25. ELSE IF Arg1.Unit is a vUnitType THEN
26. SET returnType = Arg1.Unit
27. IF Arg2.Dimension = 0 OR Arg2.Dimension = Arg1.Dimension THEN
28. SET returnDimension = Arg1.Dimension
29. ELSE
30. SET returnDimension = 1
31. END IF
32. IF (returnType = PtgAcre OR returnType = PtgHectare) AND returnDimension != 2 THEN
33. SET returnType = PtgNumDft
34. END IF
35. ELSE IF Arg2.Unit is a vUnitType THEN
36. SET returnType = Arg2.Unit
37. IF Arg1.Dimension = 0 OR Arg2.Dimension = Arg1.Dimension THEN
38. SET returnDimension = Arg2.Dimension
39. ELSE
40. SET returnDimension = 1
41. END IF
43. IF (returnType = PtgAcre OR returnType = PtgHectare) AND returnDimension != 2 THEN
44. SET returnType = PtgNumDft
45. END IF
46. END IF
47. IF returnType = PtgCy THEN
48. Return type is PtgCy with currencyID = returnCurrencyID
49. ELSE IF returnType = PtgErr THEN
50. Return type is PtgErr with error code of #VALUE!
51. ELSE IF returnDimension = 0 THEN
52. Return type is PtgNum
53. ELSE IF returnDimension = 1 THEN
54. Return type is returnType
55. ELSE
56. Return type is PtgNumMultiDim with unit = returnType and dimension = returnDimension
57. END IF

#### Subject

The **Subject** function returns a **Subject** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Subject = "SUBJECT()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Subject** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### Substitute

The **Substitute** function returns a string where substring substitution has been performed.

**ABNF:**

1. Substitute = "SUBSTITUTE(" val "," val "," val [ "," [ val ] [ "," [ val ]]] ")"

**Required Arguments:**

*Name:* **SourceString**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string to perform substitution on.

*Name:* **Substring**

*Type:* vString

An argument that specifies a substring in **SourceString** to be replaced.

*Name:* **SubstituteString**

*Type:* vString

An argument that specifies a string to use for substitution.

**Optional Arguments:**

*Name*: **Index**

*Type*: [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies a one based index, among multiple instances of **Substring** in **SourceString,** is to be substituted.

*Name*: **IgnoreCase**

*Type*: [vBoolean](#Section_59248e6377544b5ab8f4a81bddfd8548)

An argument that specifies whether the search for **Substring** in **SourceString** is case insensitive. A value of **TRUE** specifies that case is ignored. If missing, the default value is **FALSE**.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgString parse token containing **SourceString** modified with the substituted text. If **Index** is zero, the function returns a PtgErr parse token with an error code equal to #VALUE!. If **Index** is less than zero or greater than the number of **Substring** instances in **SourceString**, or if **Substring** is not found in **SourceString**, the function returns a PtgString containing **SourceString** without any substitution. If **Index** is missing, all instances of **Substring** are substituted. The search is performed according to .NET globalization rules based on the value specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

#### Sum

The **Sum** function performs a sum calculation.

**ABNF:**

1. Sum = "SUM(" val \*("," val) ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the first operand of the calculation.

**Optional Arguments:**

Zero or more subsequent operands of type vDouble.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a custom token grouping of the type vNum containing the sum of all operands. If any of the arguments is a [vUnitType](#Section_46b90760f3eb4ae99c16c3ccac56f59f) custom token grouping, the unit of the return value is equal to the unit of the first argument that is a vUnitType; otherwise, a [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) parse token is returned.

#### Tan

The **Tan** function performs a tangent calculation.

**ABNF:**

1. Tan = "TAN(" [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf) ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation. If **Arg1** is not a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token, the value of **Arg1** is assumed to have the unit of radians.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the tangent of the value of **Arg1**.

#### TanH

The **TanH** function performs a hyperbolic tangent calculation.

**ABNF:**

1. TanH = "TANH(" val ")"

**Required Arguments:**

*Name:* **Angle**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation. If **Arg1** is not a [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) custom token grouping, the value of **Arg1** is assumed to have the unit of radians.

**Return Value:**

*Type:* [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a PtgNum parse token containing the hyperbolic tangent of the value of **Arg1**.

#### TextHeight

The **TextHeight** function returns the height of the composed [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in a [shape](#Section_2995871af1b144e69754989fb760ee18).

**ABNF:**

1. TextHeight = "TEXTHEIGHT(" val "," val ")"

**Required Arguments:**

*Name:* **Shape**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a shape.

*Name:* **MaximumWidth**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the maximum allowable width of the composed text.

**Return Value:**

*Type:* [PtgNumDft](#Section_c1c1c5f00830454fbb52f3169c43b3ca), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgNumDft parse token containing the height of the composed text in the shape referenced by **Shape**. If **MaximumWidth** is specified, the text composition fits the longest line of composed text within **MaximumWidth**. If **Shape** is not a reference to a cell specified by a [TheText](#Section_1c16e63e2d304c3a96c9a423f07afa0f) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### TextWidth

The **TextWidth** function returns the width of the composed [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) in a [shape](#Section_2995871af1b144e69754989fb760ee18).

**ABNF:**

1. TextWidth = "TEXTWIDTH(" val [ "," val ] ")"

**Required Arguments:**

*Name:* **Shape**

*Type:* [CellRef](#Section_627a6d4f7cd343969ec0cc9f744eeacd)

An argument that specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a shape.

**Optional Arguments:**

*Name:* **MaximumWidth**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the maximum allowable width of the composed text.

**Return Value:**

*Type:* [PtgNumDft](#Section_c1c1c5f00830454fbb52f3169c43b3ca), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns a PtgNumDft parse token containing the width of the composed text in the shape referenced by **Shape**. If **MaximumWidth** is specified, the text composition fits the longest line of composed text within **MaximumWidth**. If **Shape** is not a reference to a cell specified by a [TheText](#Section_1c16e63e2d304c3a96c9a423f07afa0f) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Theme

The **Theme** function returns a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property value.

**ABNF:**

1. Theme = "THEME(" val ")"

**Required Arguments:**

*Name:* **ThemeProperty**

*Type:* [vThemeString](#Section_8e3f58e672004901945bd57cbf292d37)

An argument that specifies the property to be returned.

**Return Value:**

*Type:* [vThemeColor](#Section_086b805c6a154d258e8da691ae277673), [vThemeEffect](#Section_feb16a5f63d442e4aaf73ea74cabef81), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

If the **ThemeProperty** is a fixed theme color scheme property as specified by the value "Color" in the "Scheme" column in the vThemeString table and the value of the structure of the [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of the [msvThemeColors](#Section_92c3ad6f52524b8686d3d1245bfeb9aa) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) child element of a [User](#Section_e226a8403d3145b4b643144f3ebbbc35) [Section\_Type](#Section_735b599d1359476785931c508a885779) element is less than 254, this function returns vThemeColor. The fixed theme index is specified by the value of the structure of the Value Cell\_Type child element of the msvThemeColors Row\_Type element and the fixed theme property is specified by **ThemeProperty**. If the **V** attribute of the Value Cell\_Type child element of the msvThemeColors Row\_Type element has a value equal to 254 and the argument of the [USE](#Section_baa06b88433f4e3093dac8a5b870e6b9) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) of the **F** attribute of the Value Cell\_Type child element is equal to the **UniqueID** attribute of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element associated with a [master](#Section_04e031963af24a52bd32ef5d79b9efc5), the **ThemeProperty** argument specifies a [custom fixed color scheme](#Section_ab95740a3f624387b40b003c118f409d) property value specified by the Value Cell\_Type child element of the User Row\_Type element specified by the "User Row\_Type" column in the vThemeString table.

If the **ThemeProperty** is a fixed theme effect scheme property as specified by the value "Effect" in the "Scheme" column in vThemeString table and the value of the structure of the Value Cell\_Type child element of the [msvThemeEffects](#Section_db573c68ea8c410a9b0e6639b6975a51) Row\_Type child element of a User Section\_Type element is less than 254, this function returns vThemeEffect. The fixed theme index is specified by the value of the structure of the Value Cell\_Type child element of the msvThemeEffects Row\_Type element and the fixed theme property is specified by **ThemeProperty**. If the **V** attribute of the Value Cell\_Type child element of the msvThemeEffects Row\_Type element has a value equal to 254 and the argument of the USE function token of the **F** attribute of the Value Cell\_Type child element is equal to the **UniqueID** attribute of a Master\_Type element associated with a master, the **ThemeProperty** argument specifies a custom fixed effect scheme property value specified by the Value Cell\_Type child element of the User Row\_Type element specified by the "User Row\_Type" column in the vThemeString table.

If **ThemeProperty** is not found in the table of vThemeString, this function returns a PtgErr parse token with a value equal to #VALUE!.

#### ThemeCBV

The **ThemeCBV** function returns a color with modified luminance and saturation, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), using the tint ([[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.2.3.34) and shade ([ISO/IEC29500-1:2016] section 20.1.2.3.31) color modifiers specified by a fill gradient [stop fill property](#Section_52745b68d28443b9a8f0564732579b99) of a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

**ABNF:**

1. ThemeCBV = "THEMECBV(" val "," val ")"

**Required Arguments:**

*Name:* **Color**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies a color.

*Name:* **StopNum**

*Type:* [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c)

An argument that specifies the fill gradient stop number.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns the **Color** argument modified by the tint ([ISO/IEC29500-1:2016] section 20.1.2.3.34) and shade ([ISO/IEC29500-1:2016] section 20.1.2.3.31) color modifiers of the color of a **gs** element as specified by the **CT\_GradientStop** type specified in [ISO/IEC29500-1:2016] section 20.1.8.36 of the one-based index position specified by the **StopNum** argument in a **gsLst** child element as specified by the **CT\_GradientStopList** type specified in [ISO/IEC29500-1:2016] section 20.1.8.37 of a **gradFill** element as specified by the **CT\_GradientFillProperties** type specified in [ISO/IEC29500-1:2016] section 20.1.8.33 of the [Theme\_XML\_Part](#Section_24711011cb574f6d8de85b95ac64f40a) associated with the dynamic theme.

If the value of the structure of a [ThemeIndex](#Section_524e63d4ec9c42eaa1368d63b339dd2b), [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4), [EffectSchemeIndex](#Section_2117ea2ac6e941d0a6a86b46d9042ae6), [ConnectorSchemeIndex](#Section_9753d977a1de49e8888ccf532efe7982), or [FontSchemeIndex](#Section_9d9c7fe007aa4245864799073a835ebc) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element in the containing [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or [style](#Section_b01703e4a485477d9128e93a52880888) is equal to zero, this function returns a PtgColorRGB parse token with a value equal to the **Color** argument.

If the value of the **StopNum** argument is greater than 10 or less than one, this function returns a PtgErr parse token with a value equal to #VALUE!.

#### ThemeGuard

The **ThemeGuard** function returns the value of the passed argument.

**ABNF:**

1. ThemeGuard = "THEMEGUARD(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument to be returned.

**Return Value:**

*Type:* vAny

This function returns the value of **Arg1**.

#### ThemeProp

The **ThemeProp** function returns the [embellishment](#Section_3109f5643c584956b2d17995824f5343) and multiformat property values of a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9).

**ABNF:**

1. ThemeProp = "THEMEPROP(" val ")"

**Required Arguments:**

*Name:* **Arg**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument indicating the property name.

**Return Value:**

*Type:* [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

If the value of the **Arg** argument is equal to "embellishment", this function returns the embellishment property value from the dynamic theme. If the value of the **Arg** argument is equal to "multiformat", this function returns the multiformat property value from the dynamic theme.

If the value of the structure of a [ThemeIndex](#Section_524e63d4ec9c42eaa1368d63b339dd2b), [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4), [EffectSchemeIndex](#Section_2117ea2ac6e941d0a6a86b46d9042ae6), [ConnectorSchemeIndex](#Section_9753d977a1de49e8888ccf532efe7982), or [FontSchemeIndex](#Section_9d9c7fe007aa4245864799073a835ebc) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element in the containing [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style is equal to zero, and if the value of the **Arg** argument is equal to "embellishment" or "multiformat", this function returns the value zero.

If the value of the **Arg** argument is not equal to "embellishment" or "multiformat", this function returns a PtgErr with a value equal to #VALUE!.

#### ThemeRestore

The **ThemeRestore** function returns a value of zero.

**ABNF:**

1. ThemeRestore = "THEMERESTORE(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument to be ignored.

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns a PtgInt parse token with a value of zero.

#### ThemeVal

The **ThemeVal** function returns a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property value.

**ABNF:**

1. ThemeVal = "THEMEVAL(" [ val ] "," [ val ] ")"

**Optional Arguments:**

*Name:* **ThemeProperty**

*Type:* [vDynamicThemeString](#Section_4f684ea27ae340d78956b0a7a5cf2a26)

An argument that specifies a property to be returned.

*Name:* **Arg2**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument to be returned.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546), [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc), [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af), [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7), [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5), [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822), [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998), [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b), [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c), [vLength](#Section_f809c3999b1c4a688984764d079d153c), [PtgInt](#Section_1887fdf908d14280a221a0f021d96970), vAny, [PtgErr](#Section_93a276b0294d468587050798f619a88d)

If this function is called without argument, it returns the dynamic theme property value of the [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that it resides in directly without invoking [theme inheritance](#Section_9c650d6d38064e3db76ead30b20f237a). If this function is called with an argument, it returns the property value from the dynamic theme specified by the **ThemeProperty** argument directly without invoking theme inheritance.

If the **V** attribute of the [ColorSchemeIndex](#Section_1e7e9b7ed11641c09c535e57c26042a4) Cell\_Type element of a [shape](#Section_2995871af1b144e69754989fb760ee18), [master](#Section_04e031963af24a52bd32ef5d79b9efc5), or style is equal to 65535 and the argument of the [USE](#Section_baa06b88433f4e3093dac8a5b870e6b9) [function token](#Section_71b8cdb618854fa2a75016d6626054f4) of the **F** attribute of the ColorSchemeIndex Cell\_Type element is equal to the **UniqueID** attribute of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element associated with a master, the **ThemeProperty** argument specifies a [custom dynamic theme color scheme](#Section_9311aae49b594a598b72544081e37ec2) property value specified by the [Value](#Section_4919da7a6e944e0b8a77a96f67544087) Cell\_Type child element of the [User](#Section_e226a8403d3145b4b643144f3ebbbc35) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) elements specified in the "User Row\_Type" column in the vDynamicThemeString table for the arguments "Dark1", "Light1", "AccentColor", "AccentColor2", "AccentColor3", "AccentColor4", "AccentColor5", "AccentColor6", and "BackgroundColor".

If the value of the structure of a [ThemeIndex](#Section_524e63d4ec9c42eaa1368d63b339dd2b), ColorSchemeIndex, or [FontSchemeIndex](#Section_9d9c7fe007aa4245864799073a835ebc) Cell\_Type element in the containing shape, master, or style is equal to zero and **Arg2** is not specified, this function returns the property value specified by the "No Theme" column in the vDynamicThemeString table. If the value of the structure of a ThemeIndex, ColorSchemeIndex, [EffectSchemeIndex](#Section_2117ea2ac6e941d0a6a86b46d9042ae6), [ConnectorSchemeIndex](#Section_9753d977a1de49e8888ccf532efe7982), or FontSchemeIndex Cell\_Type element in the containing shape, master, or style is equal to zero and **Arg2** is specified, this function returns the value of **Arg2**.

If the value of the structure of a [QuickStyleVariation](#Section_68bb0221d8a1476ea1328c60a49cea63) Cell\_Type element in the containing shape, master, or style is greater than or equal to 2 and less than or equal to 15, then the [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb) of the "TextColor", "LineColor", and "FillColor" vDynamicThemeString **ThemeProperty** arguments are affected as described in the QuickStyleVariation Cell\_Type element table.

If the value of the **ThemeProperty** argument is not found in the vDynamicThemeString table, this function returns a PtgErr parse token with a value equal to #VALUE!.

#### Time

The **Time** function returns a time from values representing an hour, minute, and second.

**ABNF:**

1. Time = "TIME(" val "," val "," val ")"

**Required Arguments:**

*Name:* **Hour**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies an offset in hours from midnight.

*Name:* **Minute**

*Type:* vUnsignedInt

An argument that specifies an offset in minutes from **Hour**.

*Name:* **Second**

*Type:* vUnsignedInt

An argument that specifies an offset in seconds from **Minute**.

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879)

This function returns a PtgDate parse token containing a time of day. The [date-time-value](#Section_a792b810916a4fbabb767675d1818aea) component of the return value is the signed fractional value of the double precision number representing the input date-time, as specified in [[MS-OAUT]](%5bMS-OAUT%5d.pdf#Section_bbb05720f72445c78d17f83c3d1a3961) section [2.2.25](http://msdn.microsoft.com/en-us/library/35c9bf2d-b8e8-4d7d-a50f-367da0d99fce/).

#### TimeValue

The **TimeValue** function returns a time component from a value representing a date and time.

**ABNF:**

1. TimeValue = "TIMEVALUE(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a value representing a date and time.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a PtgDate parse token. If the conversion if successful, the function returns a PtgDate containing the time component of **DateTimeArg**. If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Tint

The **Tint** function increases the luminance, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), of a color value.

**ABNF:**

1. Tint = "TINT(" val "," val ")"

**Required Arguments:**

*Name:* **Color**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies a color.

*Name:* **Delta**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies an amount to modify the luminance of **Color**.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing a color value with increased luminance. If **Delta** is less than zero, the luminance is decreased.

#### Title

The **Title** function returns the **Title** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Title = "TITLE()"

**Return Value:**

*Type:* [[PtgString](#Section_4d0ed5933e39412e841dea295324c20b)](#Section_706c71a7cb044b7e97b6f136c13acd60)

This function returns the **Title** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a web drawing.

#### Tone

The **Tone** function decreases the saturation, as specified in the [**hue-saturation-luminance (HSL)**](#gt_e801f5cb-4827-4f1b-9337-d13e22a43972) [**color space**](#gt_5d3fb5ea-c686-4d3b-b0ff-aef33fe1aee5), of a color value.

**ABNF:**

1. Tone = "TONE(" val "," val ")"

**Required Arguments:**

*Name:* **Color**

*Type:* [vColor](#Section_6953a98a0e984d3e9fe95484589a4695)

An argument that specifies a color.

*Name:* **Delta**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies the amount to modify the saturation of **Color**.

**Return Value:**

*Type:* [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546)

This function returns a PtgColorRGB parse token containing a color value with decreased saturation. If **Delta** is less than zero, the saturation is increased.

#### Trim

The **Trim** function performs the removal of all [**whitespace**](#gt_d812ae04-029d-4f94-b205-962d2142a117) from a string except for single spaces between words.

**ABNF:**

1. Trim = "TRIM(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string from which to remove whitespace.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a PtgString parse token containing the string with whitespace removed. The following [**Unicode**](#gt_c305d0ab-8b94-461a-bd76-13b40cb8c4d8) characters are considered as whitespace.

| Value | Meaning |
| --- | --- |
| "\u0009" | Character Tabulation |
| "\u000a" | Line Feed |
| "\u000b" | Line Tabulation |
| "\u000c" | Form Feed |
| "\u000d" | Carriage Return |
| "\u0020" | Space |
| "\u00a0" | No-Break Space |
| "\u1680" | Ogham Space Mark |
| "\u180e" | Mongolian Vowel Separator |
| "\u2000" | En Quad |
| "\u2001" | Em Quad |
| "\u2002" | En Space |
| "\u2003" | Em Space |
| "\u2004" | Three-Per-Em Space |
| "\u2005" | Four-Per-Em Space |
| "\u2006" | Six-Per-Em Space |
| "\u2007" | Figure Space |
| "\u2008" | Punctuation Space |
| "\u2009" | Thin Space |
| "\u200a" | Hair Space |
| "\u202f" | Narrow No-Break Space |
| "\u205f" | Medium Mathematical Space |
| "\u3000" | Ideographic Space |

#### Trunc

The **Trunc** function performs a truncation operation.

**ABNF:**

1. Trunc = "TRUNC(" val "," val ")"

**Required Arguments:**

*Name:* **Number**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies a number to truncate.

*Name:* **Digits**

*Type:* [vSignedInt](#Section_3b7ec511bc8748a6b8ffeb03611b6e81)

An argument that specifies the decimal place to use for the truncation operation.

**Return Value:**

*Type:* [[vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)](#Section_7f64df2fdf884411b32281cedbae60c7)

This function returns a vNum custom token grouping containing the truncated value of **Number**, as described by the following table.

| Condition | Result |
| --- | --- |
| **Digits** > 0 | The function returns **Number** truncated to **Digits** places to the right of the decimal point. |
| **Digits** = 0 | The function returns **Number** truncated to an integer. |
| **Digits** < 0 | The function returns **Number** truncated to negative **Digits** places to the left of the decimal point. |

The unit of the return value is equal to the unit of **Number**. If **Digits** is less than -308 or greater than 15, the function returns **Number**.

#### UMinus

The **UMinus** function performs the negation calculation.

**ABNF:**

1. UMinus = "\_UMINUS(" val ")" / "-" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [[vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)](#Section_25d21d600457404d90f42e5ae1c55682)

This function returns a vNum custom token grouping containing the negation of the value of **Arg1**. The unit of the return value is equal to the unit of **Arg1**.

#### UniChar

The **UniChar** function returns a Unicode character.

**ABNF:**

1. Unichar = "UNICHAR(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vUnsignedInt](#Section_2bbc84c7c544464296b688e7ecf5e249)

An argument that specifies a number.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function returns the Unicode character of **Arg1**. If **Arg1** is less than one and greater than 65535, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### UPlus

The **UPlus** function performs an identity calculation.

**ABNF:**

1. UPlus = "\_UPLUS(" val ")" / "+" val

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc)

An argument that specifies the operand of the calculation.

**Return Value:**

*Type:* [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed)

This function returns a vNum custom token grouping containing the value of **Arg1**. The unit of the return value is equal to the unit of **Arg1**.

#### Upper

The **Upper** function performs an upper case conversion.

**ABNF:**

1. Upper = "UPPER(" val ")"

**Required Arguments:**

*Name:* **Arg1**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a string to convert.

**Return Value:**

*Type:* [PtgString](#Section_4d0ed5933e39412e841dea295324c20b)

This function returns a PtgString parse token containing the string converted to upper case. The conversion is performed according to .NET globalization rules based on the value specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). For more information about .NET globalization rules, see [[MSDN-ENCLOC]](https://go.microsoft.com/fwlink/?LinkId=153669).

#### Use

The **Use** function returns a value of 254.

**ABNF:**

1. Use = "USE(" val ")"

**Required Arguments:**

*Name:* **Master**

*Type:* [vString](#Section_706c71a7cb044b7e97b6f136c13acd60)

An argument that specifies a name or **GUID** of a master.

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns a PtgInt parse token with a value of 254.

#### Version

The **Version** function returns a **AppVersion** property of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ABNF:**

1. Version = "VERSION()"

**Return Value:**

*Type:* [PtgInt](#Section_1887fdf908d14280a221a0f021d96970)

This function returns the integer part of the **AppVersion** property, specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 22.2.2.2, from the [App XML part](#Section_85e85f4058134276aed798b4d83506d0) of a web drawing.

#### WeekDay

The **WeekDay** function returns a day of the week, according to the Gregorian calendar, from a value representing a date and time.

**ABNF:**

1. WeekDay = "WEEKDAY(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the weekday component from **DateTimeArg.** If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

#### Year

The **Year** function returns a year, according to the Gregorian calendar, from a value representing a date and time.

**ABNF:**

1. Year = "YEAR(" val ["," val] ")"

**Required Arguments:**

*Name:* **DateTimeArg**

*Type:* [vAny](#Section_4a97b6616cca49a7911670b57c9379d2)

An argument that specifies a date and time value.

**Optional Arguments:**

*Name:* **Locale**

*Type:* [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f)

An argument that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) to use when parsing **DateTimeArg**. The default value is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**Return Value:**

*Type:* [[PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7)](#Section_fab3b1105fdd45f58f4a13025fbd7e62), [PtgErr](#Section_93a276b0294d468587050798f619a88d)

This function attempts a conversion, as described by the [DateTime](#Section_a792b810916a4fbabb767675d1818aea) function, of **DateTimeArg** to a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token. If the conversion is successful, the function returns a PtgNum parse token containing the year component from **DateTimeArg**. If the conversion fails, the function returns a PtgErr parse token with an error code equal to #VALUE!.

### Parse Token Definitions

The following parse token definition sections specify the [tokens](#Section_8c89c22183b145e4970f6488f7ac70e4) that can be part of a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532) and that can be persisted in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) in [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) elements.

The definition of a token specifies an ABNF [[RFC5234]](https://go.microsoft.com/fwlink/?LinkId=123096) grammar and a Cell\_Type representation. The ABNF specifies the format of the token in a formula expression. The Cell\_Type representation specifies the properties that define the token, as described in the [operand tokens](#Section_feec456821f8404b8592d9be8f43e99b) section.

#### PtgAcre

The **PtgAcre** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of acres.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgAcre = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "ACRE"

**double-value** is a double precision floating-point number expressed as acres.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as square inches. |
| U | MUST be "AC". |

#### PtgAngDD

The **PtgAngDD** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of decimal degrees.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

PtgAngDD = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "DEG"

**double-value** is a double precision floating-point number expressed as decimal degrees.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e). |
| U | MUST be "DEG". |

#### PtgAngDft

The **PtgAngDft** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of radians.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgAngDft = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "DA"

**double-value** is a double precision floating-point number expressed as radians.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e). |
| U | MUST be "DA". |

#### PtgAngDMS

The **PtgAngDMS** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of degrees-minutes-seconds.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgAngDMS = [unsigned-int-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) %xB0 [unsigned-int-value "&apos;" [double-value %x22]]

The first **unsigned-int-value** is an unsigned integer expressed as degrees.

The second **unsigned-int-value** is an unsigned integer expressed as minutes.

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as seconds.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e). |
| U | MUST be "AD". |

#### PtgAngRad

The **PtgAngRad** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of radians.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgAngRad = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "RAD"

**double-value** is a double precision floating-point number expressed as radians.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as an [angleInternalUnitNumber](#Section_56a64f828aaa460f9359bb6b81f2231e). |
| U | MUST be "RAD". |

#### PtgBool

The **PtgBool** structure specifies a [**Boolean**](#gt_1d79d7a7-ba2c-4b34-931c-7ba8057c87b2) value.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgBool = [bool-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

**bool-value** specifies a Boolean.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be zero if the value of the structure is equal to **FALSE** and MUST be one if value of the structure is equal to **TRUE**. |
| U | MUST NOT exist or MUST be "BOOL". |

#### PtgByte

The **PtgByte** structure specifies an unsigned byte value.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgByte = [unsigned-byte-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

**unsigned-byte-value** specifies an unsigned byte.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be greater than or equal to zero, and less than 256. |
| U | MUST NOT exist or MUST be "NUM". |

#### PtgColorRGB

The **PtgColorRGB** structure specifies an [**RGB**](#gt_2c716d3a-e60b-4e52-bbb0-2fdeb298003b) color value represented as a 3-byte signed integer.

**ABNF:**

1. PtgColorRGB = [color-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

The most significant byte of **color-value** specifies the intensity of the color red. The second most significant byte of **color-value** specifies the intensity of the color green. The least significant byte of **color-value** specifies the intensity of the color blue.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a value that satisfies the ABNF. |
| U | MUST NOT exist, or MUST be "COLOR". |

#### PtgCy

The **PtgCy** structure specifies a currency value.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

PtgCy = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) string-value

**double-value** specifies a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as a value of the currency specified by **string-value**.

**string-value** specifies a string that contains a currency. It MUST be a value defined by [**vCurrency**](#Section_afa85c0df5d947488108d3e5ac691720).

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a value that satisfies the ABNF. |
| U | MUST be "CY". |

#### PtgDate

The **PtgDate** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of time.

This structure MUST NOT appear in the ABNF of a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). It can be the result of a [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb).

When stored as a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166), this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a date and time of day, in complete extended format, as specified in [[ISO-8601]](https://go.microsoft.com/fwlink/?LinkId=89920) section 4.3.2. |
| U | MUST be "DATE". |

#### PtgEDay

The **PtgEDay** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of days.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgEDay = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "ED"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as days.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [durationInternalUnitNumber](#Section_f533f47261a840e0890ae39725d41eee). |
| U | MUST be "ED". |

#### PtgEHour

The **PtgEHour** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of hours.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgEHour = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "EH"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as hours.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [durationInternalUnitNumber](#Section_f533f47261a840e0890ae39725d41eee). |
| U | MUST be "EH". |

#### PtgEMin

The **PtgEMin** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of minutes.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgEMin = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "EM"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as minutes.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [durationInternalUnitNumber](#Section_f533f47261a840e0890ae39725d41eee). |
| U | MUST be "EM". |

#### PtgErr

The **PtgErr** structure specifies an error code.

This structure MUST NOT appear in the ABNF of a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532). It can be the result of a [formula evaluation](#Section_c5bb54635973457ab48163e1e29c5aeb).

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has an **E** attribute that MUST be one of the values from the following table.

| Value | Meaning |
| --- | --- |
| #DIM! | A dimensional value that exceeds the dimension range. |
| #DIV/0! | Division by zero. |
| #VALUE! | An argument or operand of the wrong type. |
| #REF! | A reference to a cell that does not exist. |
| #NUM! | An invalid number. |
| #N/A | Not available value. |

#### PtgESec

The **PtgESec** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of seconds.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgESec = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "ES"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as seconds.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [durationInternalUnitNumber](#Section_f533f47261a840e0890ae39725d41eee). |
| U | MUST be "ES". |

#### PtgEWeek

The **PtgEWeek** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of weeks.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgEWeek = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "EW"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as weeks.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [durationInternalUnitNumber](#Section_f533f47261a840e0890ae39725d41eee). |
| U | MUST be "EW". |

#### PtgHectare

The **PtgHectare** structure is a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of hectares.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgHectare = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "HA"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as hectares.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as square inches. |
| U | MUST be "HA". |

#### PtgInt

The **PtgInt** structure specifies a signed four-byte integer value.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgInt = [int-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

**int-value** specifies a signed four-byte integer.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be greater than or equal to -231 and be less than 231. |
| U | MUST NOT exist or MUST be "NUM". |

#### PtgNum

The **PtgNum** structure specifies a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d).

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNum = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

**double-value** is a double precision floating-point number.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the value of the structure expressed as a double precision floating-point number. |
| U | MUST NOT exist. |

#### PtgNumCM

The **PtgNumCM** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of centimeters.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumCM = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "CM"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as centimeters.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "CM". |

#### PtgNumDft

The **PtgNumDft** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of inches.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumDft = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "DL"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as inches.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a lengthInternalUnitNumber (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "DL". |

#### PtgNumF

The **PtgNumF** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of feet.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumF = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "FT"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as feet.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "FT". |

#### PtgNumFI

The **PtgNumFI** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of feet and inches.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumFI = [unsigned-int-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "FT" [SP double-value "IN"]

**unsigned-int-value** is an unsigned integer expressed as feet.

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as inches.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "F\_I". |

#### PtgNumI

The **PtgNumI** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of inches.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumI = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "IN"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as inches.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "IN" or "IN\_F". |

#### PtgNumKM

The **PtgNumKM** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of kilometers.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumKM = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "KM"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as kilometers.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "KM". |

#### PtgNumM

The **PtgNumM** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of meters.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumM = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "M"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as meters.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "M". |

#### PtgNumMI

The **PtgNumMI** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of miles.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumMI = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "MI"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as miles.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "MI" or "MI\_F". |

#### PtgNumMM

The **PtgNumMM** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of millimeters.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumMM = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "MM"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as millimeters.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **lengthInternalUnitNumber** (section [2.5.8.3](#Section_516ff6cd424241d09233b76aefc64430)). |
| U | MUST be "MM". |

#### PtgNumMultiDim

The **PtgNumMultiDim** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) that is multidimensional.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

PtgNumMultiDim = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) string-value "^" dimension

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as the unit indicated by **string-value**.

**string-value** is a string that specifies the unit of measurement, and MUST be a value from the following table.

| Value | Unit |
| --- | --- |
| DEG | Degrees |
| DA | Radians |
| RAD | Radians |
| DATE | Days |
| ED | Days |
| EH | Hours |
| EM | Minutes |
| ES | Seconds |
| EW | Weeks |
| CM | Centimeters |
| DL | Inches |
| FT | Feet |
| IN | Inches |
| KM | Kilometers |
| MM | Millimeters |
| M | Meters |
| MI | Miles |
| NM | Nautical miles |
| YD | Yards |
| DP | Inches |
| DE | Days |
| C | Ciceros |
| D | Didots |
| DT | Points |
| P | Picas |
| PT | Points |

**dimension** is an integer that specifies the number of dimensions.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a value that satisfies the [**ABNF**](#gt_24ddbbb4-b79e-4419-96ec-0fdd229c9ebf). |
| U | MUST be "MULTIDIM". |

#### PtgNumNM

The **PtgNumNM** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of nautical miles.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumNM = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "NM"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as nautical miles.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [lengthInternalUnitNumber](#Section_516ff6cd424241d09233b76aefc64430). |
| U | MUST be "NM". |

#### PtgNumPct

The **PtgNumPct** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) expressed as a percentage.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumPct = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "%"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d).

| Attribute | Value |
| --- | --- |
| V | MUST be the double precision floating-point number double-value. The value is normalized such that the value of 1 corresponds to 100 percent. |
| U | MUST be "PER". |

#### PtgNumYards

The **PtgNumYards** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of yards.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgNumYards = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "YD"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as yards.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [lengthInternalUnitNumber](#Section_516ff6cd424241d09233b76aefc64430). |
| U | MUST be "YD". |

#### PtgPageDft

The **PtgPageDft** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of inches.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgPageDft = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "DP"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as inches.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [lengthInternalUnitNumber](#Section_516ff6cd424241d09233b76aefc64430). |
| U | MUST be "DP". |

#### PtgPnt

The **PtgPnt** token specifies the coordinates of a two-dimensional point.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure is identical to the [Pnt](#Section_e634f457cf514dafaa225387dabaa9dc) function token, and MUST satisfy the following ABNF.

**ABNF:**

PtgPnt = "PNT(" val "," val ")"

The first **val** specifies a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as an x-coordinate.

The second **val** specifies a double precision floating-point number expressed as a y-coordinate.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a value that satisfies the following ABNF.  PtgPnt = "PNT(" [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "," double-value ")"  The first **double-value** specifies a double precision floating-point number expressed as an x-coordinate.  The second **double-value** specifies a double precision floating-point number expressed as a y-coordinate. |
| U | MUST be "PNT". |

#### PtgShort

The **PtgShort** structure specifies a signed two-byte integer value.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgShort = [short-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

**short-value** specifies a signed two-byte integer.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be greater than or equal to -32768, and be less than 32768. |
| U | MUST NOT exist or MUST be "NUM". |

#### PtgString

The **PtgString** structure specifies a string.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgString = DQUOTE [string-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) DQUOTE

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the string-value (section 2.5.1). |
| U | MUST be "STR". |

#### PtgTDurDft

The **PtgTDurDft** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of days.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTDurDft = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "DE"

**double-value** specifies a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as days.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a durationInternalUnitNumber (section [2.5.8.2](#Section_f533f47261a840e0890ae39725d41eee)). |
| U | MUST be "DE". |

#### PtgTypCD

The **PtgTypCD** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of ciceros and didots.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypCD = [unsigned-int-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "C" [double-value]

**unsigned-int-value** is an unsigned integer expressed as ciceros.

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as didots.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a typographicInternalUnitNumber (section [2.5.8.4](#Section_60ace6256a86466cbdd1011164b51cce)). |
| U | MUST be "C\_D". |

#### PtgTypCi

The **PtgTypCi** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of ciceros.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypCi = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "C"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as ciceros.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a [typographicInternalUnitNumber](#Section_60ace6256a86466cbdd1011164b51cce). |
| U | MUST be "C". |

#### PtgTypDft

The **PtgTypDft** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of points.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypDft = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "DT"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as points.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a typographicInternalUnitNumber (section [2.5.8.4](#Section_60ace6256a86466cbdd1011164b51cce)). |
| U | MUST be "DT". |

#### PtgTypDi

The **PtgTypDi** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of didots.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypDi = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "D"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as didots.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a typographicInternalUnitNumber (section [2.5.8.4](#Section_60ace6256a86466cbdd1011164b51cce)). |
| U | MUST be "D". |

#### PtgTypPi

The **PtgTypPi** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of picas.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypPi = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "P"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as picas.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as an typographicInternalUnitNumber (section [2.5.8.4](#Section_60ace6256a86466cbdd1011164b51cce)). |
| U | MUST be "P". |

#### PtgTypPP

The **PtgTypPP** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of picas and points.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypPP = [unsigned-int-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "P" [double-value]

**unsigned-int-value** is an unsigned integer expressed as picas.

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as points.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a **typographicInternalUnitNumber** (section [2.5.8.4](#Section_60ace6256a86466cbdd1011164b51cce)). |
| U | MUST be "P\_PT". |

#### PtgTypPt

The **PtgTypPt** structure specifies a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) with a unit of points.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgTypPt = [double-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "PT"

**double-value** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) expressed as points.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be the numeric value of the structure expressed as a typographicInternalUnitNumber (section [2.5.8.4](#Section_60ace6256a86466cbdd1011164b51cce)). |
| U | MUST be "PT". |

#### PtgUnsShort

The **PtgUnsShort** structure specifies a two-byte unsigned integer value.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. PtgUnsShort = [unsigned-int-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

**unsigned-int-value** specifies a two-byte unsigned integer.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be greater than or equal to zero, and be less than 65536. |
| U | MUST NOT exist or MUST be "NUM". |

#### PtgNurbs

The **PtgNurbs** structure specifies a non-uniform rational B-spline (NURBS).

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. Nurbs = "NURBS(" knotLast "," degree "," xType "," yType \*("," xN "," yN "," knotN "," weightN) ")"
2. knotLast = [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf)
3. degree = val
4. xType = val
5. yType = val
6. xN = val

yN = val

1. knotN = val

weightN = val

**knotLast** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) that specifies the last knot.

**degree** is an integer value that specifies the degree of the B-spline.

**xType** is an unsigned integer value that specifies how to interpret the x-coordinates. If **xType** is zero, the input **xN** is interpreted as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). Otherwise, the input **xN** is interpreted in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18) containing the structure.

**yType** is an unsigned integer value that specifies how to interpret the y-coordinates. If **yType** is zero, the input **yN** is interpreted as relative coordinates. Otherwise, the input **yN** is interpreted in the coordinate system of the shape containing the structure.

**xN** is a double precision floating-point number that specifies an x-coordinate.

**yN** is a double precision floating-point number that specifies a y-coordinate.

**knotN** is a double precision floating-point number that specifies a knot on the B-spline.

**weightN** is a double precision floating-point number that specifies a weight on the B-spline.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a value that satisfies the following ABNF.   1. Nurbs = "NURBS(" knotLast "," degree "," xType "," yType \*("," xN "," yN "," knotN "," weightN) ")" 2. knotLast = double-value 3. degree = int-value 4. xType = unsigned-int-value 5. yType = unsigned-int-value 6. xN = double-value 7. yN = double-value 8. knotN = double-value 9. weightN = double-value   Specific definition is provided earlier. |
| U | MUST NOT exist. |

#### PtgPolyLine

The **PtgPolyLine** structure specifies a polyline.

When found in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532), this structure MUST satisfy the following ABNF.

**ABNF:**

1. Polyline = "POLYLINE(" xType "," yType \*("," xN "," yN) ")"
2. xType = [val](#section_e617d7e0b0d94019890ccb4de0e3c6bf)
3. yType = val
4. xN = val

yN = val

**xType** is an unsigned integer value that specifies how to interpret the x-coordinates. If **xType** is zero, the input **xN** is interpreted as [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). Otherwise, the input **xN** is interpreted in the [coordinate system](#Section_99f006f5c67e4e298a19134ae611fd8f) of the [shape](#Section_2995871af1b144e69754989fb760ee18) containing the structure.

**yType** is an unsigned integer value that specifies how to interpret the y-coordinates. If **yType** is zero, the input **yN** is interpreted as relative coordinates. Otherwise, the input **yN** is interpreted in the coordinate system of the shape containing the structure.

**xN** is a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) that specifies an x-coordinate.

**yN** is a double precision floating-point number that specifies a y-coordinate.

When stored in a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element, this structure has the following attribute values.

| Attribute | Value |
| --- | --- |
| V | MUST be a value that satisfies the following ABNF.   1. Polyline = "POLYLINE(" xType "," yType \*("," xN "," yN) ")" 2. xType = unsigned-int-value 3. yType = unsigned-int-value 4. xN = double-value   yN = double-value  Specific definition is provided earlier. |
| U | MUST be "POLYLINE". |

### Reference Token Definitions

The reference token definitions in the following sections specify the [reference tokens](#Section_a5d209e86bf34212acb3509df1b76d7d) that can be contained in a [formula expression](#Section_e715b9f4e36e402bb9625894c4ad7532).

#### CellRef

The **CellRef** token specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in a [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4).

**ABNF:**

1. cellRef = [sheetref "!"] ( [name](#section_e617d7e0b0d94019890ccb4de0e3c6bf) / [NamedCellRef](#Section_88a3cadc39a244859ab2d3c7753caee7) / [IndexedCellRef](#Section_7bf12038d0ed41b899f1b347fb43a380) / [SingleLetterNamedCellRef](#Section_73f38e6a43d841c187d8652c8f8e40ee) )
2. sheetref = [CrossPageRef](#Section_47586acdcb584444a4b7f813f7fedaca) / [DocSheetRef](#Section_e6619635198a4486b718c5273ed1e2c6) / [MasterSheetRef](#Section_435b2f8945b145ceb36b1b89c7862cd8) / [PageSheetRef](#Section_5837d1f1d2f346f283d778f8d8bb725c) / [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470) / [StyleSheetRef](#Section_500ba523e86b4d2e853771726409e2ba)

**name** is a name of a cell in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST be equal to the **N** attribute of a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that is a child element of the [Sheet\_Type](#Section_8187d7a229874248810eb304b36a9669) element in the current reference context or a reference context specified by **sheetref**.

#### CrossPageRef

The **CrossPageRef** token specifies a reference to the [shape sheet](#Section_58fee8aeb28d46668b78dacb48217060) of a [shape](#Section_2995871af1b144e69754989fb760ee18) on a [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). It also changes the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) to the specified drawing page.

**ABNF:**

1. CrossPageRef = "pages[" [string-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "]!" [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470)

**string-value** is a name of a drawing page. It MUST be equal to the **NameU** attribute of a [Page\_Type](#Section_27e583c30ef34d7c8face37bd18d9dc2) element in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

**ShapeSheetRef** is a reference to a shape sheet in the drawing page specified by string-value.

#### DocSheetRef

The **DocSheetRef** token specifies a reference to the [document sheet](#Section_5fec1d1bc18a47eab37cd1055f870538) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It also changes the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) to the document sheet.

**ABNF:**

1. DocSheetRef = "thedoc"

#### IndexedCellRef

The **IndexedCellRef** token specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4).

**ABNF:**

1. IndexedCellRef = [SectionRef](#Section_99e6bf6f4a414c5bbdc1b9219155c0c4) "." [name](#section_e617d7e0b0d94019890ccb4de0e3c6bf) [ "[" id "]" ]

**name** is the name of a cell in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST be equal to the **N** attribute of [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that is a child element of the [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is specified by **id**.

**id** is the index of a [row](#Section_d74a66b474714467b154ea4f60de7fdd) in the web drawing. It MUST be equal to the value of the **IX** attribute plus one of a Row\_Type element that is a child element of the [Section\_Type](#Section_735b599d1359476785931c508a885779) element that is specified by **SectionRef**. If **id** is omitted, the value of one is used.

#### MasterSheetRef

The **MasterSheetRef** token specifies a reference to the [shape sheet](#Section_58fee8aeb28d46668b78dacb48217060) of a [shape](#Section_2995871af1b144e69754989fb760ee18) in a [master](#Section_04e031963af24a52bd32ef5d79b9efc5). It also changes the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) to the specified master.

**ABNF:**

1. MasterSheetRef = "masters[" [string-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf) "]!" [ShapeSheetRef](#Section_6c30a22f5514492c955fbd73f3d31470)

**string-value** is the name of a master in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST be equal to the **NameU** attribute of a [Master\_Type](#Section_555d23f9a1aa401bb17680a9d0ed4109) element in the web drawing.

**ShapeSheetRef** is a reference to a shape sheet in the master specified by **string-value**.

#### NamedCellRef

The **NamedCellRef** token specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4).

**ABNF:**

1. NamedCellRef = SectionRef "." RowName [ "." CellName ]
2. RowName = name
3. CellName = name

**RowName** is the name of a [row](#Section_d74a66b474714467b154ea4f60de7fdd) in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST be equal to the **N** attribute of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is a child element of the [Section\_Type](#Section_735b599d1359476785931c508a885779) element that is specified by **SectionRef**.

**CellName** is the name of a cell in the web drawing. It MUST be equal to the **N** attribute of a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that is a child element of the Row\_Type element that is specified by **RowName**.

If **CellName** is omitted, the cell is specified in the following table based on the value of **SectionRef**. **SectionRef** MUST be one of values in the following table.

| SectionRef value | Default cell name |
| --- | --- |
| "User" | Value |
| "Prop" | Value |
| "Actions" | Menu |
| "Controls" | X |
| "Hyperlink" | Description |
| "SmartTags" | X |

#### PageSheetRef

The **PageSheetRef** token specifies a reference to the [page sheet](#Section_63494c43b4cd4a0c93ef16620eb13da7) of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4). It also changes the current reference context to the page sheet.

**ABNF:**

1. PageSheetRef = "thepage"

#### SectionRef

The **SectionRef** token specifies a reference to a [section](#Section_f8718337db6e434fb0bf7aa1fc4ef27b) in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4).

**ABNF:**

1. SectionRef = "Geometry" id / "Actions" / "Char" / "Connections" / "Controls" / "Fields" / "FillGradientStops" / "Hyperlink" / "Layers" / "LineGradientStops" / "Para" / "Prop" / "Reviewer" / "Scratch" / "SmartTags" / "Tabs" / "User" / name

**id** is the index of a [Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02) section in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST be equal to the value of the **IX** attribute plus one of a [Section\_Type](#Section_735b599d1359476785931c508a885779) element.

**name** is the name of a section in the [Extension](#Section_741970fc73db4ab298d82d30e31d5357) part of the web drawing. It MUST be equal to **N** attribute of the one of [SectionDef\_Type](#Section_345f2585409a450ca46172a76777d348) elements.

Other **SectionRef** values specify a reference to a section according to the following table.

| ABNF | Section |
| --- | --- |
| "Actions" | [Actions](#Section_9e067f55528a4669a2bbfa914559e4ae) |
| "Char" | [Character](#Section_4be3913348a54f72976281f67f80da31) |
| "Connections" | [Connection](#Section_9df0a23afe2843b0ae95423f22cfb4ea) |
| "Controls" | [Control](#Section_b41c74816cdc48db9ae346d652f65e14) |
| "Fields" | [Field](#Section_179d1cf155b54c86b7db1baa772d3068) |
| "FillGradientStops" | [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) |
| "Geometry" | Geometry |
| "Hyperlink" | [Hyperlink](#Section_75add4817f6f47069c71473afc404d57) |
| "Layers" | [Layer](#Section_dc8a626a0efc448fad913eeca2d40888) |
| "LineGradientStops" | [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) |
| "Para" | [Paragraph](#Section_5a21eaa240b145729d02208da043da0a) |
| "Prop" | [Property](#Section_0489948cf7944ce3a3929525e6865bec) |
| "Reviewer" | [Reviewer](#Section_a46803c1647d4a23abe5aa7f07bb02b0) |
| "Scratch" | [Scratch](#Section_cb7792b11d76426f9d6ba5ad8d2ccfae) |
| "SmartTags" | [ActionTag](#Section_409d9b637f1646b382279bb35a067ba0) |
| "Tabs" | [Tabs](#Section_1ebf938deeb2454486090feeb086cf2c) |
| "User" | [User](#Section_e226a8403d3145b4b643144f3ebbbc35) |

#### ShapeSheetRef

The **ShapeSheetRef** token specifies a reference to the [shape sheet](#Section_58fee8aeb28d46668b78dacb48217060) of a [shape](#Section_2995871af1b144e69754989fb760ee18) in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4).

**ABNF:**

1. ShapeSheetRef = nameid / "sheet." id

**nameid** is the identifier of a shape sheet. It MUST be equal to the **NameU** attribute of a [ShapeSheet\_Type](#Section_5d6be8d61cab4722ba32d73febc4e51d) element in the current reference context.

**id** is the identifier of a shape sheet. It MUST be equal to the **ID** attribute of a ShapeSheet\_Type element in the current reference context.

#### SingleLetterNamedCellRef

The **SingleLetterNamedCellRef** token specifies a reference to a [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) in the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4).

**ABNF:**

1. SingleLetterNamedCellRef = SectionRef "." SingleLetterCellName id
2. SingleLetterCellName = ALPHA

**id** is the index of a [row](#Section_d74a66b474714467b154ea4f60de7fdd) in the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It MUST be equal to the **IX** attribute plus one of a [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element that is a child element of the [Section\_Type](#Section_735b599d1359476785931c508a885779) element specified by **SectionRef**.

**SingleLetterCellName** is the name of a cell in the row specified by **id**. It MUST be equal to the **N** attribute of a [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) element that is a child element of the Row\_Type element that is specified by **id**.

#### StyleSheetRef

The **StyleSheetRef** token specifies a reference to a [style sheet](#Section_b01703e4a485477d9128e93a52880888) in a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9). It also changes the current [reference context](#Section_9f6d52c415584fa8a113cfcf25a566b4) to the specified style sheet.

**ABNF:**

1. StyleSheetRef = "styles!" string-value

**string-value** is the name of a style. It MUST be equal to the **NameU** attribute of the [StyleSheet\_Type](#Section_9136adc9bd94425ea32d15fee80707ef) element in the web drawing.

### Custom Input Type Definitions

The custom input definitions in the following sections specify custom input types. Custom input types are used to specify the token types for function arguments. Functions that require a particular class of token inputs, and thus require a conversion from many possible source token types, declare arguments with custom input types and rely on the custom input type to derive a valid input argument from a source token. The definition of each custom input type specifies how the source token is derived, the computed properties of the custom input type, and under which cases the input argument is not valid.

#### vBoolean

The **vBoolean** custom input type specifies a [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) parse token that is derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It contains the following computed property.

**Value:** This property specifies the **Value** of a [Boolean value](#Section_4954ad8351eb4c0da2a63fe272ccb84d) derived from the source token as follows.

If the source token is a PtgBool, the **Value** is equal to the source token **Value**. If the source token is a PtgString that contains a formula that evaluates to **FALSE** or zero, the **Value** is **FALSE**; if the source token is a PtgString that contains a formula that evaluates to **TRUE** or a value other than zero, the **Value** is **TRUE**. Otherwise, the input argument is not valid.

If the source token is a [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed) or PtgCy with a **Value** equal to zero, the **Value** is **FALSE**; otherwise, **Value** is **TRUE**.

#### vColor

The **vColor** custom input type specifies a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) parse token derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a PtgColorRGB, [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It contains the following computed property.

**Value:** This property specifies the **Value** of a [color value](#Section_4176b6fadd7e48e383a46a1ae9eac6c1) represented as a 3-byte signed integer derived from the source token **Value** as follows.

If the source token type is a PtgColorRGB, the **Value** is equal to the source token **Value**.

If the source token can be interpreted as a [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44) custom input type, the **Value** is equal to the color in the [color table](#Section_1fac45bfef104b29ada14acf47fed340) that is indexed by the source token **Value** interpreted as a vSignedLong; if the source token **Value** interpreted as a vSignedLong is not a valid index in the color table, the **Value** is equal to the color at index zero in the color table.

In all other cases, the input argument is not valid.

#### vDouble

The **vDouble** custom input type specifies a [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed) custom token grouping derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It contains the following computed properties.

**Value:** This property specifies the **Value** of a [numeric value](#Section_b5ad1198be394ba1beb36096450475a0) or [date value](#Section_56868d1afe1346799f514beab5adbab3), derived from the source token **Value** as follows.

If the source token is a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token, the **Value** is equal to the source token **Value**.

If the source token **Value** can be converted to a double, as described in [[MSDN-ToDouble]](https://go.microsoft.com/fwlink/?LinkId=153666), the **Value** is the result of the conversion.

If the source token is a PtgString containing a numeric value, or the concatenation of a numeric value and a unit and the numeric value can be converted to a double, as described in [MSDN-ToDouble], the **Value** is the result of the conversion.

If the source token **Value** is equal to **TRUE** (case insensitive), the **Value** is equal to one. If the source token **Value** is equal to **FALSE** (case insensitive), the **Value** is equal to zero.

In all other cases, the input argument is not valid.

**Unit:** This property specifies the **Unit** of the numeric value or date value. If the source token is a [vUnitType](#Section_46b90760f3eb4ae99c16c3ccac56f59f), the **Unit** is equal to the **Unit** of the source token. If the source token is a PtgString containing the concatenation of a numeric value and a unit, the **Unit** is equal to the unit derived from the PtgString. Otherwise, the numeric value does not have a **Unit**.

**Dimension:** This property specifies the **Dimension** of the numeric value or date value. If the source token type is a [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285) parse token, the **Dimension** is equal to the dimension of the source token. If the source token is a [PtgAcre](#Section_4ed092ea74dc47fd8782a72b8af9b84f) or [PtgHectare](#Section_6e8458cd0701450986110a116d14cfa9) parse token, the **Dimension** is equal to two. If the source token is any other vUnitType custom token grouping, the **Dimension** is equal to one. Otherwise, **Dimension** is equal to zero.

#### vDoubleEx

The **vDoubleEx** custom input type specifies either a [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed) custom token grouping or a [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) or PtgCy parse token. The **vDoubleEx** is the [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc) custom input type with the following exceptions and additional computed properties.

**Unit:** This property specifies the **Unit** of a [numeric value](#Section_b5ad1198be394ba1beb36096450475a0), [date value](#Section_56868d1afe1346799f514beab5adbab3), or [currency value](#Section_e401d710f7574a7a87af5275e9e120d5). If the source token is a PtgCy, the property specifies the **Unit** of a currency value, which is defined as "CY". Otherwise, **Unit** is equal to the type of the source token interpreted as a vDouble.

**Currency:** This property specifies the **Currency** of a currency value. If the source token is a PtgCy, the **Currency** is equal to the **Currency** of the source token. Otherwise, it does not have a **Currency** and the custom input type specifies a vNum.

#### vFloat

The **vFloat** custom input type specifies a single precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d) derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a PtgString or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It is a [vDouble](#Section_ebd0ca9fd0f14fd5ab981200c1d026cc) custom input type with the additional restriction that the **Value** property MUST conform to the range of values specified for a single precision floating-point number, as defined in [[IEEE754]](https://go.microsoft.com/fwlink/?LinkId=89903).

If the source token is a [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879) parse token, the date format specified in [[MS-OAUT]](%5bMS-OAUT%5d.pdf#Section_bbb05720f72445c78d17f83c3d1a3961) section [2.2.25](http://msdn.microsoft.com/en-us/library/35c9bf2d-b8e8-4d7d-a50f-367da0d99fce/) is used to determine whether the range of the [date value](#Section_56868d1afe1346799f514beab5adbab3) conforms to a single precision floating-point number, as defined in [IEEE754].

If the source token is not a vDouble or the source token **Value** interpreted as a vDouble does not conform to the range of values specified for a single precision floating-point number, the input argument is not valid.

#### vSignedInt

The **vSignedInt** custom input type specifies a signed integer derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It is a [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44) custom input type with the additional restriction that the **Value** property MUST be greater than or equal to -32768 and less than or equal to 32767.

If the source token is not a vSignedLong or the source token **Value** interpreted as a vSignedLong is less than -32768 or greater than 32767, the input argument is not valid.

#### vSignedLong

The **vSignedLong** custom input type specifies a signed long integer derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It contains the following computed properties.

**Value:** This property specifies a signed long integer derived from the source token as follows.

If the source token **Value** can be converted to a double, as described in [[MSDN-ToDouble]](https://go.microsoft.com/fwlink/?LinkId=153666) or as specified in [[MS-OAUT]](%5bMS-OAUT%5d.pdf#Section_bbb05720f72445c78d17f83c3d1a3961) section [2.2.25](http://msdn.microsoft.com/en-us/library/35c9bf2d-b8e8-4d7d-a50f-367da0d99fce/) for a [date value](#Section_56868d1afe1346799f514beab5adbab3), the **Value** is equal to a signed long integer calculated as follows:

Use the conversion method described in [MSDN-ToDouble] or [MS-OAUT] section 2.2.25 to obtain a double value. If the double value is not an integer, round the value towards zero to the next integer. If the integer is less than -2147483648 or greater than 2147483647, the input argument is not valid.

If the source token **Value** is equal to **TRUE** (case insensitive), the **Value** is equal to one. If the source token **Value** is equal to **FALSE** (case insensitive), the **Value** is equal to zero.

In all other cases, the input argument is not valid.

**Unit:** This property specifies the **Unit** of the [operand token](#Section_feec456821f8404b8592d9be8f43e99b) and this property has no value for this custom input type.

#### vString

The **vString** custom input type specifies a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) parse token derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a PtgString. It contains the following computed property.

**Value:** This property specifies a string derived from the source token **Value** as follows.

If the source token is a PtgString, the **Value** is equal to the source token **Value**.

If the source token is a vNumAny, the **Value** is the string form of the source token.

In all other cases, the input argument is not valid.

#### vUnsignedInt

The **vUnsignedInt** custom input type specifies an unsigned integer derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It is a [vUnsignedLong](#Section_7f9751418d77469298d44234d34095eb) custom input type with the additional restriction that **Value** MUST be less than 65536.

If the source token **Value** interpreted as a custom input type of [vSignedLong](#Section_f28297223e2e4694b44a0bdcfc5acd44) is less than 65536, **Value** is equal to the source token **Value** interpreted as a vSignedLong. Otherwise, **Value** is equal to the source token **Value** interpreted as a vSignedLong modulo 65536.

#### vUnsignedLong

The **vUnsignedLong** custom input type specifies an unsigned long integer derived from a source token that MUST be a [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) custom token grouping or a [PtgString](#Section_4d0ed5933e39412e841dea295324c20b) or [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2) parse token. It contains the following computed properties.

**Value:** This property specifies an unsigned long integer derived from the source token **Value** as follows.

If the source token **Value** can be converted to a double, as described in [[MSDN-ToDouble]](https://go.microsoft.com/fwlink/?LinkId=153666) or as specified in [[MS-OAUT]](%5bMS-OAUT%5d.pdf#Section_bbb05720f72445c78d17f83c3d1a3961) section [2.2.25](http://msdn.microsoft.com/en-us/library/35c9bf2d-b8e8-4d7d-a50f-367da0d99fce/) for a [date value](#Section_56868d1afe1346799f514beab5adbab3), the **Value** is equal to an unsigned long integer calculated as follows.

Use the conversion method described in [MSDN-ToDouble] or [MS-OAUT] section 2.2.25 to obtain a double value. If the double value is not an integer, round the value towards zero to the next integer. If the integer is greater than or equal to zero, the **Value** is equal to the integer modulo 4294967296. Otherwise, **Value** is equal to the sum of the integer modulo 4294967296 and 4294967296.

If the source token **Value** is equal to **TRUE** (case insensitive), the **Value** is equal to one. If the source token value is equal to **FALSE** (case insensitive), the **Value** is equal to zero.

In all other cases, the input argument is not valid.

**Unit:** This property specifies the **Unit** of the [operand token](#Section_feec456821f8404b8592d9be8f43e99b) and this property has no value for this custom input type.

### Custom Token Groupings

The custom token groupings in the following sections define groupings of tokens, referred to as custom token groupings. A custom token grouping specifies a set of tokens that represents a specific concept. Custom token groupings can contain other custom token groupings. The association of a token to a custom token grouping is not exclusive. These groupings do not exist in the format of the file. The purpose of these groupings is to improve the readability of the document by allowing tokens representing similar concepts to be referred to collectively.

#### vAngle

The **vAngle** custom token grouping is an aggregation of types that represent an angle. The **vAngle** contains the following tokens:

[PtgAngDD](#Section_75dc4549eb3d4bfc8e3c73cc5345cd1f), [PtgAngDft](#Section_aa6993ba93f24fb6b009e88c2eef652c), [PtgAngDMS](#Section_5c6f61c206784a5aba6b1d8407ea7bd0), [PtgAngRad](#Section_992d1e2bd40941a08b49675a67496aad)

#### vAny

The **vAny** custom token grouping is an aggregation of types that represent data. The **vAny** contains the following tokens:

[vNumAny](#Section_25d21d600457404d90f42e5ae1c55682), [PtgString](#Section_4d0ed5933e39412e841dea295324c20b), [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546), [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2), [PtgPnt](#Section_74bafdc175d543d4b029b547a63c26b8), [PtgErr](#Section_93a276b0294d468587050798f619a88d), [PtgNURBS](#Section_28741816c5ba4ee6a73801938ff478c4), [PtgPolyline](#Section_ca51a3f3efbc40ff844b7c54730e31c9)

#### vLength

The **vLength** custom token grouping is an aggregation of types that can be used to represent a length, including a distance, duration, or typography measurement. The value of any type in this grouping MUST be interpreted as a [lengthInternalUnitNumber](#Section_516ff6cd424241d09233b76aefc64430). The **vLength** contains the following tokens:

[PtgEDay](#Section_9411fd36e6e64f2d8022bfb30daefdc6), [PtgEHour](#Section_339a94e35a804f36a56ffc3520ab9dbf), [PtgEMin](#Section_0bde3065fff94775b972fb4580aae9c7), [PtgESec](#Section_81e009e4b1e74007afe74d6c05843476), [PtgEWeek](#Section_d6b91ccf04bf458dbe274a44eb2a7ec1), [PtgNumCM](#Section_329125cb42144abe925c46f77abb9b93), [PtgNumDft](#Section_c1c1c5f00830454fbb52f3169c43b3ca), [PtgNumF](#Section_4099d68402ca4cf9865d18a93ff5e701), [PtgNumFI](#Section_9ed637b4cfc141ffbbb5e04b5d9cebb4), [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822), [PtgNumKM](#Section_a0b32592ed6b4b4c8729d2a94ce45397), [PtgNumM](#Section_b0afad8bab4543a7975e371aecf81773), [PtgNumMI](#Section_dc6dab5c773c48798bb6ab47950d3906), [PtgNumMM](#Section_0ec7d8b3108c4eb0b1abff361b35f046), [PtgNumNM](#Section_7dd9e771a61f4f47bc5074c0473e39da), [PtgNumYards](#Section_0541f25e2b9544e782cdd9d5263dff38), [PtgPageDft](#Section_b444caac3e8b41bfaa556fd84dec0faf), [PtgTDurDft](#Section_88d43cf9dc69435f84e56fb7df3d786b), [PtgTypCD](#Section_a4caa003fcf04e468b95d146a708f2e7), [PtgTypCi](#Section_312a4de63b514f84837766c28a767143), [PtgTypDft](#Section_3c1afeb46a104059866977b105fcc380), [PtgTypDi](#Section_b9a9ab05727348d586c920a1807b7ef6), [PtgTypPi](#Section_4bb1f53c92974bdfacc0806610d50e25), [PtgTypPP](#Section_2e9fc0fa541c4cf9a4df431e3b94925d), [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5), [vScalar](#Section_53aa08d870b047449a94608d01487e40)

#### vNum

The **vNum** custom token grouping is an aggregation of types that represent either a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7) or a number with no units. The **vNum** contains the following tokens:

[vUnitType](#Section_46b90760f3eb4ae99c16c3ccac56f59f), [vScalar](#Section_53aa08d870b047449a94608d01487e40)

#### vNumAny

The **vNumAny** custom token grouping is an aggregation of types that represent any number. The **vNumAny** contains the following tokens:

[vNum](#Section_40645a2108cc43a38b42bfb643bc76ed), [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998)

#### vScalar

The **vScalar** custom token grouping is an aggregation of types that represent a number with no unit of measure. The **vScalar** contains the following tokens:

[PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c), [PtgInt](#Section_1887fdf908d14280a221a0f021d96970), [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7), [PtgShort](#Section_f7b9155c4ceb4742bdf4db90e2d5220c), [PtgUnsShort](#Section_fab3b1105fdd45f58f4a13025fbd7e62)

#### vUnitType

The **vUnitType** custom token grouping is an aggregation of types that represent a [Unit Number](#Section_da66f46e884147ada137cf49e71157a7). The **vUnitType** contains the following tokens:

[vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b), [PtgAcre](#Section_4ed092ea74dc47fd8782a72b8af9b84f), [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879), [PtgEDay](#Section_9411fd36e6e64f2d8022bfb30daefdc6), [PtgEHour](#Section_339a94e35a804f36a56ffc3520ab9dbf), [PtgEMin](#Section_0bde3065fff94775b972fb4580aae9c7), [PtgESec](#Section_81e009e4b1e74007afe74d6c05843476), [PtgEWeek](#Section_d6b91ccf04bf458dbe274a44eb2a7ec1), [PtgHectare](#Section_6e8458cd0701450986110a116d14cfa9), [PtgNumCM](#Section_329125cb42144abe925c46f77abb9b93), [PtgNumDft](#Section_c1c1c5f00830454fbb52f3169c43b3ca), [PtgNumF](#Section_4099d68402ca4cf9865d18a93ff5e701), [PtgNumFI](#Section_9ed637b4cfc141ffbbb5e04b5d9cebb4), [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822), [PtgNumKM](#Section_a0b32592ed6b4b4c8729d2a94ce45397), [PtgNumM](#Section_b0afad8bab4543a7975e371aecf81773), [PtgNumMI](#Section_dc6dab5c773c48798bb6ab47950d3906), [PtgNumMM](#Section_0ec7d8b3108c4eb0b1abff361b35f046), [PtgNumMultiDim](#Section_cda376558fd845d5bb4fcd6578dad285), [PtgNumNM](#Section_7dd9e771a61f4f47bc5074c0473e39da), [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af), [PtgNumYards](#Section_0541f25e2b9544e782cdd9d5263dff38), [PtgPageDft](#Section_b444caac3e8b41bfaa556fd84dec0faf), [PtgTDurDft](#Section_88d43cf9dc69435f84e56fb7df3d786b), [PtgTypCD](#Section_a4caa003fcf04e468b95d146a708f2e7), [PtgTypCi](#Section_312a4de63b514f84837766c28a767143), [PtgTypDft](#Section_3c1afeb46a104059866977b105fcc380), [PtgTypDi](#Section_b9a9ab05727348d586c920a1807b7ef6), [PtgTypPi](#Section_4bb1f53c92974bdfacc0806610d50e25), [PtgTypPP](#Section_2e9fc0fa541c4cf9a4df431e3b94925d), [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5)

### Custom Internal Unit Types

The custom internal unit types in the following sections specify internal unit types. All internal unit values MUST conform to a double precision [**floating-point number**](#gt_237156df-b9cf-4b8a-9753-98001801a90d).

#### angleInternalUnitNumber

The **angleInternalUnitNumber** custom internal unit type specifies a value with a unit of radians.

#### durationInternalUnitNumber

The **durationInternalUnitNumber** custom internal unit type specifies a value with a unit of days.

#### lengthInternalUnitNumber

The **lengthInternalUnitNumber** custom internal unit type specifies a value with a unit of inches.

#### typographicInternalUnitNumber

The **typographicInternalUnitNumber** custom internal unit type specifies a value with a unit of inches.

### Custom Structures

The custom structures in the following sections specify custom structures and the set of valid values for these structures.

#### vCalendar

The **vCalendar** custom structure is an unsigned integer that specifies the calendar system to use when formatting dates and times.

It MUST be a value from the following table.

| Value | Description |
| --- | --- |
| 0 | Western |
| 1 | Arabic Hijri |
| 2 | Hebrew Lunar |
| 3 | Chinese National |
| 4 | Japanese Emperor |
| 5 | Thai Buddhist |
| 6 | Korean Danki |
| 7 | Japanese Saka Era |
| 8 | Transliterated English |
| 9 | Transliterated French |
| 10 | Gregorian US English |
| 11 | Gregorian Middle East French |
| 12 | Gregorian Arabic |
| 13 | Um-al-Qura |

#### vCurrency

The **vCurrency** custom structure is a signed integer or a string that specifies a currency.

It MUST be a value from the following table.

| ID | String | Meaning |
| --- | --- | --- |
| -1 |  | Undefined currency type |
| 0 | SYS | System |
| 1 | XXX | Omit currency symbol |
| 10 | EUR | European Union: euro |
| 11 | USD | United States: dollar |
| 12 | ATS | Austria: schilling |
| 13 | AUD | Australia: dollar |
| 14 | BEF | Belgium: franc |
| 15 | CAD | Canada: dollar |
| 16 | CHF | Switzerland: franc |
| 17 | CNY | China (Mainland): yuan |
| 18 | DEM | Germany: mark |
| 19 | DKK | Denmark: krone |
| 20 | ESP | Spain: peseta |
| 21 | FIM | Finland: markka |
| 22 | FRF | France: franc |
| 23 | GBP | United Kingdom: pound |
| 24 | GRD | Greece: drachma |
| 25 | HKD | Hong Kong SAR: dollar |
| 26 | HUF | Hungary: forint |
| 27 | IDR | Indonesia: rupiah |
| 28 | IEP | Ireland: punt |
| 29 | ILS | Israel: shekel |
| 30 | ITL | Italy: lira |
| 31 | JPY | Japan: yen |
| 32 | KRW | Korea, Republic of (South): won |
| 33 | LUF | Luxembourg: franc |
| 34 | MXN | Mexico: peso |
| 35 | MYR | Malaysia: ringgit |
| 36 | NLG | Netherlands: guilder |
| 37 | NOK | Norway: krone |
| 38 | NZD | New Zealand: dollar |
| 39 | PHP | Philippines: peso |
| 40 | PLZ | Poland: zloty (obsolete, use 89) |
| 41 | PTE | Portugal: escudo |
| 42 | ROL | Romania: leu |
| 43 | RUR | Russia: rouble (obsolete, use 90) |
| 44 | SEK | Sweden: kroner |
| 45 | SGD | Singapore: dollar |
| 46 | THB | Thailand: baht |
| 47 | TWD | Taiwan: dollar |
| 48 | XEU | European Currency Unit (ECU) |
| 49 | YUN | Yugoslavia, former: dinar (obsolete, use 91) |
| 50 | ZAR | South Africa: rand |
| 56 | ARS | Argentina: peso |
| 57 | BMD | Bermuda: dollar |
| 58 | BOB | Bolivia: boliviano |
| 59 | BRR | Brazil: cruzeiro real (obsolete, use 88) |
| 60 | BSD | Bahamas: dollar |
| 61 | CLP | Chile: peso |
| 62 | COP | Colombia: peso |
| 63 | CRC | Costa Rica: colon |
| 64 | CZK | Czech Republic: koruna |
| 65 | DOP | Dominican Republic: peso |
| 66 | ECS | Ecuador: sucre |
| 67 | EGP | Egypt: pound |
| 68 | HNL | Honduras: lempira |
| 69 | INR | India: rupee |
| 70 | JMD | Jamaica: dollar |
| 71 | JOD | Jordan: dinar |
| 72 | KWD | Kuwait: dinar |
| 73 | MOP | Macao SAR: pataca |
| 74 | NIO | Nicaragua: cordoba oro |
| 75 | PAB | Panama: balboa |
| 76 | PEN | Peru: nuevo sol |
| 77 | PKR | Pakistan: rupee |
| 78 | PYG | Paraguay: guarani |
| 79 | SAR | Saudi Arabia: riyal |
| 80 | SIT | Slovenia: tolar |
| 81 | SKK | Slovakia: koruna |
| 82 | SVC | El Salvador: colon |
| 83 | TRY | Turkey: new lira |
| 84 | TTD | Trinidad and Tobago: dollar |
| 85 | UYU | Uruguay: peso |
| 86 | VEB | Venezuela: bolivar |
| 87 | VND | Viet Nam: dong |
| 88 | BRL | Brazil: real |
| 89 | PLN | Poland: zloty |
| 90 | RUB | Russia: rouble |
| 91 | YUM | Serbia and Montenegro: dinar |
| 92 | BYB | Belarus: ruble |
| 93 | UAH | Ukraine: hryvnia |
| 94 | AFA | Afghanistan: afghani |
| 95 | ALL | Albania: lek |
| 96 | DZD | Algeria: dinar |
| 97 | ADP | Andorra: peseta |
| 98 | AOA | Angola: kwanza |
| 99 | XCD | East Caribbean Dollar |
| 100 | AMD | Armenia: dram |
| 101 | AWG | Aruba: guilder |
| 102 | AZM | Azerbaijan: manat |
| 103 | BHD | Bahrain: dinar |
| 104 | BDT | Bangladesh: taka |
| 105 | BBD | Barbados: dollar |
| 106 | BYR | Belarus: ruble |
| 107 | BZD | Belize: dollar |
| 108 | XOF | CFA Franc BCEAO |
| 109 | BTN | Bhutan: ngultrum |
| 110 | BAM | Bosnia and Herzegovina: convertible marks |
| 111 | BWP | Botswana: pula |
| 112 | BND | Brunei: dollar |
| 113 | BGL | Bulgaria: lev (historic) |
| 114 | BGN | Bulgaria: lev |
| 115 | BIF | Burundi: franc |
| 116 | KHR | Cambodia: riel |
| 117 | XAF | CFA Franc BEAC |
| 118 | CVE | Cape Verde: escudo |
| 119 | KYD | Cayman Islands: dollar |
| 120 | KMF | Comoros: franc |
| 121 | CDF | Congo (DRC): franc |
| 122 | HRK | Croatia: kuna |
| 123 | CUP | Cuba: peso |
| 124 | CYP | Cyprus: pound |
| 125 | DJF | Djibouti: franc |
| 126 | ERN | East Timor: escudo |
| 127 | TPE | Eritrea: nakfa |
| 128 | EEK | Estonia: kroon |
| 129 | ETB | Ethiopia: birr |
| 130 | FKP | Falkland Islands (Islas Malvinas): pound |
| 131 | FJD | Fiji Islands: dollar |
| 132 | XPF | CFP Franc |
| 133 | GMD | The Gambia: dalasi |
| 134 | GEL | Georgia: lari |
| 135 | GHC | Ghana: cedi |
| 136 | GIP | Gibraltar: pound |
| 137 | GTQ | Guatemala: quetzal |
| 138 | GNF | Guinea: franc |
| 139 | GWP | Guinea-Bissau: peso |
| 140 | GYD | Guyana: dollar |
| 141 | HTG | Haiti: gourde |
| 142 | ISK | Iceland: krona |
| 143 | IRR | Iran: rial |
| 144 | IQD | Iraq: dinar |
| 145 | KZT | Kazakhstan: tenge |
| 146 | KES | Kenya: shilling |
| 147 | KPW | North Korean: won |
| 148 | KGS | Kyrgyzstan: som |
| 149 | LAK | Laos: kip |
| 150 | LVL | Latvia: lats |
| 151 | LBP | Lebanon: pound |
| 152 | LSL | Lesotho: loti |
| 153 | LRD | Liberia: dollar |
| 154 | LYD | Libya: dinar |
| 155 | LTL | Lithuania: litus |
| 156 | MKD | Former Yugoslav Republic of Macedonia: denar |
| 157 | MGF | Madagascar: franc |
| 158 | MWK | Malawi: kwacha |
| 159 | MVR | Maldives: rufiyaa |
| 160 | MTL | Malta: lira |
| 161 | MRO | Mauritania: ouguiya |
| 162 | MUR | Mauritius: rupee |
| 163 | MDL | Moldova: leu |
| 164 | MNT | Mongolia: tugrik |
| 165 | MAD | Morocco: dirham |
| 166 | MZM | Mozambique: metical |
| 167 | MMK | Myanmar: kyat |
| 168 | NAD | Namibia: dollar |
| 169 | NPR | Nepal: rupee |
| 170 | ANG | Netherlands Antilles: guilder |
| 171 | NGN | Nigeria: naira |
| 172 | OMR | Oman: rial |
| 173 | PGK | Papua New Guinea: kina |
| 174 | QAR | Qatar: rial |
| 175 | RWF | Rwanda: franc |
| 176 | SHP | Saint Helena: pound |
| 177 | WST | Samoa: tala |
| 178 | STD | Sao Tome and Principe: dobra |
| 179 | SCR | Seychelles: rupee |
| 180 | SLL | Sierra Leone: leone |
| 181 | SBD | Solomon Islands: dollar |
| 182 | SOS | Somalia: shilling |
| 183 | LKR | Sri Lanka: rupee |
| 184 | SDD | Sudan: dinar |
| 185 | SRG | Suriname: guilder |
| 186 | SZL | Swaziland: lilangeni |
| 187 | SYP | Syria: pound |
| 188 | TJR | Tajikistan: ruble |
| 189 | TJS | Tajikistan: somoni |
| 190 | TZS | Tanzania: shilling |
| 191 | TOP | Tonga: pa'anga |
| 192 | TND | Tunisia: dinar |
| 193 | TMM | Turkmenistan: manat |
| 194 | UGX | Uganda: shilling |
| 195 | AED | United Arab Emirates: dirham |
| 196 | UZS | Uzbekistan: sum |
| 197 | VUV | Vanuatu: vatu |
| 198 | YER | Yemen: rial |
| 199 | ZMK | Zambia: kwacha |
| 200 | ZWD | Zimbabwe: dollar |
| 201 | VEF | Venezuela: bolivar fuerte |
| 202 | MGA | Madagascar: ariary |
| 203 | RSD | Serbia: dinar |
| 204 | CSD | Serbia: dinar (Former Serbia and Montenegro) |

#### vDataType

The **vDataType** custom structure is an unsigned integer that specifies a data type.

It MUST be a value from the following table.

| Value | Meaning |
| --- | --- |
| 0 | Specifies that the data is formatted as a string. |
| 1 | Specifies that the data is formatted as a fixed list. Displays the list items in a drop-down combo box in the dialog box​. |
| 2 | Specifies that the data is formatted as a number. |
| 3 | Specifies that the data is formatted as a Boolean. |
| 4 | Specifies that the data is formatted as a variable list. Displays the list items in a drop-down combo box in the dialog box. Users can select a list item or enter a new item that is added to the current list in the element. |
| 5 | Specifies that the data is formatted as a date and time value. |
| 6 | Specifies that the data is formatted as a duration value. |
| 7 | Specifies that the data is formatted as a currency value. |

#### vFieldPicture

The **vFieldPicture** custom structure is an unsigned integer that specifies a predefined format picture string.

It MUST be a value from the following table.

| Value | Format string |
| --- | --- |
| 0 | 0.#### |
| 1 | 0.#### u |
| 2 | 0 |
| 3 | 0 u |
| 4 | 0.0 |
| 5 | 0.0 u |
| 6 | 0.00 |
| 7 | 0.00 u |
| 8 | 0.000 |
| 9 | 0.000 u |
| 10 | <,FEET/INCH>0.000 u |
| 11 | <,rad>0.#### u |
| 12 | <,deg>0.# u |
| 13 | <,FEET/INCH># #/# u |
| 14 | <,FEET/INCH># #/## u |
| 15 | 0 #/# |
| 16 | 0 #/# u |
| 17 | 0 #/## |
| 18 | 0 #/## u |
| 20 | ddddd |
| 21 | dddddd |
| 22 | M/d/y |
| 23 | MM/dd/yy |
| 24 | MMM d, yyyy |
| 25 | MMMM d, yyyy |
| 26 | d/M/YY |
| 27 | dd/MM/yy |
| 28 | d MMM, yyyy |
| 29 | d MMMM, yyyy |
| 30 | T |
| 31 | h:mm |
| 32 | hh:mm |
| 33 | H:mm |
| 34 | HH:mm |
| 35 | h:mm tt |
| 36 | Hh:mm tt |
| 37 | @ |
| 38 | @- |
| 39 | @+ |
| 40 ~ 81 | M/d/yyyy |
| 200 | M/d/yyyy |
| 201 | dddd, MMMM dd, yyyy |
| 202 | MMMM d, yyyy |
| 203 | M/d/yy |
| 204 | yyyy-MM-dd |
| 205 | d-MMM-yy |
| 206 | M.d.yyyy |
| 207 | MMM. d, yy |
| 208 | D MMMM yyyy |
| 209 | MMMM yy |
| 210 | MMM-yy |
| 211 | M/d/yyyy h:mm am/pm |
| 212 | M/d/yyyy h:mm:ss am/pm |
| 213 | H:mm am/pm |
| 214 | H:m:ss am/pm |
| 215 | HH:mm |
| 216 | HH:mm:ss |
| 217 | M/d/yyyy |
| 218 | M/d/yyyy |
| 219 | M/d/yyyy |

#### vFont

The **vFont** custom structure is a string that specifies the name of a system [**font**](#gt_f8aa3f46-99d1-49bb-858f-b4bfa546c1c2). If the value is "0" or "", the structure does not specify a font.

#### vFormatString

The **vFormatString** custom structure is a string that specifies the formatting information to determine how a value is displayed. If **vFormatString** is an empty string, the result string is an empty string.

A **vFormatString** is composed of casting notation, field pictures, and format strings.

**Casting notation:** The casting notation specifies the unit of the value to be formatted and the display unit of the value. If present it MUST appear at the beginning of the **vFormatString**. If the casting notation is present, the notation is stripped from the format string before the formatting is performed. It MUST satisfy the following ABNF.

**ABNF:**

CastingNotation = "<" [ SourceUnit ] "," [ DisplayUnit ] ">"

SourceUnit = [string-value](#section_e617d7e0b0d94019890ccb4de0e3c6bf)

DisplayUnit = string-value

The first **string-value** specifies a unit of the value to be formatted. It MUST be a [vUnitString](#Section_c7234647083a40a29784e37a02db5f1f) or a value equal to "$".

The second **string-value** specifies a unit displayed in the resulting string. It MUST be a vUnitString or a value equal to "$".

The value to be formatted is converted as follows. Ifthevalue to be formatted is a [[vScalar](#Section_53aa08d870b047449a94608d01487e40)](#Section_7f64df2fdf884411b32281cedbae60c7) and **SourceUnit** is a vUnitString, the value is multiplied by a factor that converts the unit of **SourceUnit** into the [custom internal unit type](#Section_ea6328b8644b4f05bc9b03b6415eb764) associated with the type ofthe unit of **SourceUnit**. If thevalue to be formatted is a vScalar and **SourceUnit** is equal to "$", the value is converted to [PtgCy](#Section_6c0f20d1ccc6407f9d084daa4f1e19f2). If **DisplayUnit** is a vUnitString, the resulting value is multiplied by a factor that converts the custom internal unit type associated with the type ofthe unit of **DisplayUnit** into the unit of **DisplayUnit.** If **DisplayUnit** is "$", the resulting value is converted to PtgCy.

**Field picture:** A field picture is a predefined index that specifies format strings. If the format string contains a field picture, it is replaced by the corresponding format string as specified in [vFieldPicture](#Section_4ef6189293444401b53e845082be420e) before the formatting is performed. It MUST satisfy the following ABNF.

**ABNF:**

Field-picture = "{<" unsigned-int-value ">}" / "esc("unsigned-int-value ")"

The first **unsigned-int-value** specifies a field picture index. It MUST be a vFieldPicture. If it is not found in the table of vFieldPicture, the default value is following. If the value that is formatted is a PtgCy or [vNumAny](#Section_25d21d600457404d90f42e5ae1c55682) (except [PtgDate](#Section_5e609c5cd3da4d6ab6ca56bc40435879), [PtgEDay](#Section_9411fd36e6e64f2d8022bfb30daefdc6), [PtgEHour](#Section_339a94e35a804f36a56ffc3520ab9dbf), [PtgEMin](#Section_0bde3065fff94775b972fb4580aae9c7), [PtgESec](#Section_81e009e4b1e74007afe74d6c05843476), or [PtgEWeek](#Section_d6b91ccf04bf458dbe274a44eb2a7ec1)), the default value is zero. If the value that is formatted is a PtgDate, PtgEDay, PtgEHour, PtgEMin, PtgESec, or PtgEWeek, the default value is 200. Otherwise, the formatting returns an empty string.

The second **unsigned-int-value** specifies a field picture index. It MUST be a vFieldPicture. If it is greater than 18, the default value is zero.

**String format strings:** If the format string contains the character "@", the value string is formatted into the result string as specified by the following table. The result strings produced by these format strings are influenced by the language specified for the formatting. The default value for the language is specified by the **Language** property, defined in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

| Format Character | Name | Description |
| --- | --- | --- |
| \ | Escape character | The next character is inserted into the result string and is not interpreted as a format character.  For example, to display the backslash character, "\\" is used. |
| "text"  'text' | Literal string | The text enclosed in quotation marks is inserted into the result string and the characters are not interpreted as format characters. |
| @ | Text placeholder | The value string is inserted into the result string. |
| @+ | Uppercase text placeholder | The value string is converted to uppercase and inserted into the result string. |
| @- | Lowercase text placeholder | The value string is converted to lowercase and inserted into the result string.  For example, FORMAT("Hello", "@ @+ @-") displays "Hello HELLO hello". |

**Date/Time format strings:** If the format string does not contain the characters "@", "#", or "0", and does contain the characters "h", "H", "m", "M", "s", "S", "d", "D", "y", "Y", "t", "T", "g", "G", "n", "N", "e", "E", "w", "W", "c", or "C", the value is formatted as specified by the following table. The result strings produced by these format strings are influenced by the language and calendar that are specified for the formatting. The default value for the language is specified by the **Language** property, defined in [ISO/IEC29500-2:2012] section 11, from the Core XML part of a web drawing.

In the following table, the format character values listed on multiple lines in the same table row are equivalent.

| Format Character | Name | Description |
| --- | --- | --- |
| d | Day placeholder | The day of the month as a number is inserted into the result string. |
| dd | Day placeholder | The day of the month as a two-digit number, with a leading zero if necessary, is inserted into the result string. |
| ddd  w | Short day of week placeholder | The day as an abbreviation is inserted into the result string. |
| dddd  ww | Long day of week placeholder | The day as a full name is inserted into the result string. |
| M | Month placeholder | The month as a number is inserted into the result string. |
| MM | Month placeholder | The month as a two-digit number, with a leading zero if necessary, is inserted into the result string. |
| MMM | Month placeholder | The name of the month in abbreviated form is inserted into the result string. |
| MMMM | Month placeholder | The full name of the month is inserted into the result string. |
| yy | Year placeholder | The year as a two-digit number is inserted into the result string. |
| yyyy | Year placeholder | The year as a four-digit number is inserted into the result string. |
| h | Hour placeholder | The hour in 12-hour form is inserted into the result string. |
| hh | Hour placeholder | The hour as a two-digit number, with a leading zero if necessary, in 12-hour form is inserted into the result string. |
| H | Hour placeholder | The hour in 24-hour form is inserted into the result string. |
| HH | Hour placeholder | The hour as a two-digit number, with a leading zero if necessary, in 24-hour form is inserted into the result string. |
| m | Minute placeholder | The minute is inserted into the result string. |
| mm | Minute placeholder | The minute as a two-digit number, with a leading zero if necessary, is inserted into the result string. |
| s | Second placeholder | The second is inserted into the result string. |
| ss | Second placeholder | The second as a two-digit number, with a leading zero if necessary, is inserted into the result string. |
| t | AM/PM abbreviation | The first character of the AM/PM designator for the value is inserted into the result string. |
| tt  am/pm | AM/PM designator | The AM/PM designator for the value is inserted into the result string. |
| ddddd | Short date placeholder | The value is formatted using a format string "M/d/yyyy" and inserted to the result string.  For example, FORMAT(DATETIME("6/25/07 12:05"), "ddddd") displays 6/25/2007. |
| dddddd | Long date placeholder | The value is formatted using a format string "dddd, MMMM dd, yyyy" and inserted to the result string.  For example, FORMAT(DATETIME("6/25/07 12:05"), "dddddd") displays Monday, June 25, 2007. |
| c | Short date/time placeholder | The value is formatted using a format string "M/d/yyyy h:mm:ss tt" and inserted to the result string. If the time value is zero, the value is formatted using a format string "M/d/yyyy" and inserted to the result string.  For example, FORMAT(DATETIME("6/25/07 12:05"), "c") displays 6/25/2007 12:05:00 PM. |
| C | Long date/time placeholder | The value is formatted using a format string "dddd, MMMM dd, yyyy h:mm:ss tt" and inserted to the result string.  For example, FORMAT(DATETIME("6/25/07 12:05"), "C") displays Monday, June 25, 2007 12:05:00 PM. |
| T | Long time placeholder | The value is formatted using a format string "h:mm:ss tt" and inserted to the result string.  For example, FORMAT(DATETIME("6/25/07 12:05"), "T") displays 12:05:00 PM. |
| / | Date separator | The date separator is inserted into the result string. |
| : | Time separator | The time separator is inserted into the result string. |
| [y]  [Y] | Elapsed years placeholder | The elapsed year value is inserted into the result string. |
| [yy]  [YY] | Elapsed years placeholder | The elapsed year value, as a two-digit number with a leading zero if necessary, is inserted into the result string. |
| [w]  [W] | Elapsed weeks placeholder | The elapsed week value is inserted into the result string. |
| [ww]  [WW] | Elapsed weeks placeholder | The elapsed week value, as a two-digit number with a leading zero if necessary, with a leading zero is inserted into the result string. |
| [d]  [D] | Elapsed days placeholder | The elapsed day value is inserted into the result string. |
| [dd]  [DD] | Elapsed days placeholder | The elapsed day value, as a two-digit number with a leading zero if necessary, is inserted into the result string. |
| [h]  [H] | Elapsed hours placeholder | The elapsed hour value is inserted into the result string. |
| [hh]  [HH] | Elapsed hours placeholder | The elapsed hour value, as a two-digit number with a leading zero if necessary, is inserted into the result string. |
| [m] | Elapsed minutes placeholder | The elapsed minute value is inserted into the result string. |
| [mm] | Elapsed minutes placeholder | The elapsed minute value, as a two-digit number with a leading zero if necessary, is inserted into the result string. |
| [s] | Elapsed seconds placeholder | The elapsed second value is inserted into the result string. |
| [ss] | Elapsed seconds placeholder | The elapsed second value, as a two-digit number with a leading zero if necessary, is inserted into the result string. |

**Numeric format strings:** If the format string does not contain the characters "@", and does contain the characters "#" or "0", the value is formatted as specified by the following table. The result strings produced by some of these format strings are influenced by the language that is specified for the formatting. The default value for the language is specified by the **Language** property, defined in [ISO/IEC29500-2:2012] Section 11, from the Core XML part of a web drawing.

| Format Character | Name | Description |
| --- | --- | --- |
| # | Digit placeholder | If the value being formatted has a digit in the position where the '#' appears in the format string, that digit is inserted into the result string. If the value has more digits than there are placeholders to the left of the decimal, all digits are inserted into the result string. If the value has more digits than there are placeholders to the right of the decimal, the fraction is rounded to the number of placeholders.  For example, FORMAT(0.0239, "#.###") displays as .024. |
| 0 | Zero placeholder | The digit in the position where the '0' appears in the format string is inserted into the result string. If the value has more digits than there are placeholders to the left of the decimal, all digits are inserted into the result string. If the value has more digits than there are placeholders to the right of the decimal, the fraction is rounded to the number of placeholders.  For example, FORMAT(0.0239, "0.00000") displays as 0.02390. |
| . | Decimal separator | The first '.' character in the format string determines the location of the decimal separator in the formatted value. Any additional '.' characters are ignored. |
| , | Thousands separator | If the format string contains a ',' character between two digit placeholders (0 or #) and if one is present to the left of the decimal point, the result string has a thousands separator inserted between each group of three digits to the left of the decimal separator. |
| E+ | Scientific notation | If the format string contains at least one digit placeholder to the right of this character, the number is formatted using scientific notation with an 'E' inserted between the mantissa and the exponent. The number of digit placeholders following the scientific notation indicator determines the minimum number of digits to output for the exponent. A sign character '+' precedes the exponent.  For example, FORMAT(12345.67,"###.#E+0") displays as 123.5E+2. |
| e+ | Scientific notation | If the format string contains at least one digit placeholder to the right of this character, the number is formatted using scientific notation with an 'e' inserted between the mantissa and the exponent. The number of digit placeholders following the scientific notation indicator determines the minimum number of digits to output for the exponent. A sign character '+' precedes the exponent. |
| E- | Scientific notation | If the format string contains at least one digit placeholder to the right of this character, the number is formatted using scientific notation with an 'E' inserted between the mantissa and the exponent. The number of digit placeholders following the scientific notation indicator determines the minimum number of digits to output for the exponent. A sign character '-' only precedes negative exponents. |
| e- | Scientific notation | If the format string contains at least one digit placeholder to the right of this character, the number is formatted using scientific notation with an 'e' inserted between the mantissa and the exponent. The number of digit placeholders following the scientific notation indicator determines the minimum number of digits to output for the exponent. A sign character '-' only precedes negative exponents. |
| / | Fraction placeholder | The value is formatted as a whole number and fraction, and inserted into the result string. The number of digits of the denominator is determined by the number of digit placeholders following the fraction placeholder. The maximum number of digits of a denominator is 5. The value is rounded to the nearest fraction and the simplest form of the fraction is inserted into the result string.  For example, FORMAT(12.43, "# #/#") displays as 12 3/7. |
| {space} | Space placeholder | A space character is inserted into the result string. |
| u | Lower case, Short label placeholder | A unit measurement of the numeric value in lower case, and an abbreviated form is inserted into the result string.  For example, FORMAT(12.43in, "#.## u") displays as 12.43 in. |
| U | Upper case, Short label placeholder | A unit measurement of the numeric value in upper case, and an abbreviated form is inserted into the result string.  For example, FORMAT(12.43in, "#.## U") displays as 12.43 IN. |
| uu | Lower case, Long label placeholder | A unit measurement of the numeric value in lower case is inserted into the result string.  For example, FORMAT(12.43in, "#.## uu") displays as 12.43 inches. |
| UU | Upper case, Long label placeholder | A unit measurement of the numeric value in upper case is inserted into the result string.  For example, FORMAT(12.43in, "#.## UU") displays as 12.43 INCHES. |
| uuu | Lower case, Universal label placeholder | A unit measurement of the numeric value in lower case, and a universal form is inserted into the result string.  For example, FORMAT(12.43in, "#.## uuu") displays as 12.43 in. |
| UUU | Upper case, Universal label placeholder | A unit measurement of the numeric value in upper case, and a universal form is inserted into the result string.  For example, FORMAT(12.43in, "#.## UUU") displays as 12.43 IN. |

#### vLanguage

The **vLanguage** custom structure is either a [vLanguageID](#Section_b4a726f70bc142dcad410d3c6b95204f) or [vLanguageString](#Section_f91b1356cff14c718a04247007cbe4c9).

#### vLanguageID

The **vLanguageID** custom structure is an unsigned integer that specifies an [**LCID**](#gt_c7f99c66-592f-4053-b62a-878c189653b6) that MUST be from the [vLanguageString](#Section_f91b1356cff14c718a04247007cbe4c9) table.

#### vLanguageString

The **vLanguageString** custom structure is a string that specifies a [**culture name**](#gt_b43d5a25-2069-42c0-bb00-b2b70accebac) that MUST be from the following table.

| LCID | Culture Name | Language |
| --- | --- | --- |
| 0x0036 | af | Afrikaans |
| 0x0436 | af-ZA | Afrikaans (South Africa) |
| 0x001C | sq | Albanian |
| 0x041C | sq-AL | Albanian (Albania) |
| 0x0084 | gsw | Alsatian |
| 0x0484 | gsw-FR | Alsatian (France) |
| 0x005E | am | Amharic |
| 0x045E | am-ET | Amharic (Ethiopia) |
| 0x0001 | ar | Arabic |
| 0x1401 | ar-DZ | Arabic (Algeria) |
| 0x3C01 | ar-BH | Arabic (Bahrain) |
| 0x0C01 | ar-EG | Arabic (Egypt) |
| 0x0801 | ar-IQ | Arabic (Iraq) |
| 0x2C01 | ar-JO | Arabic (Jordan) |
| 0x3401 | ar-KW | Arabic (Kuwait) |
| 0x3001 | ar-LB | Arabic (Lebanon) |
| 0x1001 | ar-LY | Arabic (Libya) |
| 0x1801 | ar-MA | Arabic (Morocco) |
| 0x2001 | ar-OM | Arabic (Oman) |
| 0x4001 | ar-QA | Arabic (Qatar) |
| 0x0401 | ar-SA | Arabic (Saudi Arabia) |
| 0x2801 | ar-SY | Arabic (Syria) |
| 0x1C01 | ar-TN | Arabic (Tunisia) |
| 0x3801 | ar-AE | Arabic (U.A.E.) |
| 0x2401 | ar-YE | Arabic (Yemen) |
| 0x002B | hy | Armenian |
| 0x042B | hy-AM | Armenian (Armenia) |
| 0x004D | as | Assamese |
| 0x044D | as-IN | Assamese (India) |
| 0x002C | az | Azerbaijani |
| 0x742C | az-Cyrl | Azerbaijani (Cyrillic) |
| 0x082C | az-Cyrl-AZ | Azerbaijani (Cyrillic, Azerbaijan) |
| 0x782C | az-Latn | Azerbaijani (Latin) |
| 0x042C | az-Latn-AZ | Azerbaijani (Latin, Azerbaijan) |
| 0x006D | ba | Bashkir |
| 0x046D | ba-RU | Bashkir (Russia) |
| 0x002D | eu | Basque |
| 0x042D | eu-ES | Basque (Basque) |
| 0x0023 | be | Belarusian |
| 0x0423 | be-BY | Belarusian (Belarus) |
| 0x0045 | bn | Bangla |
| 0x0845 | bn-BD | Bangla (Bangladesh) |
| 0x0445 | bn-IN | Bangla (India) |
| 0x781A | bs | Bosnian |
| 0x641A | bs-Cyrl | Bosnian (Cyrillic) |
| 0x201A | bs-Cyrl-BA | Bosnian (Cyrillic, Bosnia and Herzegovina) |
| 0x681A | bs-Latn | Bosnian (Latin) |
| 0x141A | bs-Latn-BA | Bosnian (Latin, Bosnia and Herzegovina) |
| 0x007E | br | Breton |
| 0x047E | br-FR | Breton (France) |
| 0x0002 | bg | Bulgarian |
| 0x0402 | bg-BG | Bulgarian (Bulgaria) |
| 0x0003 | ca | Catalan |
| 0x0403 | ca-ES | Catalan (Catalan) |
| 0x7804 | zh | Chinese |
| 0x0004 | zh-Hans | Chinese (Simplified) |
| 0x0804 | zh-CN | Chinese (Simplified, PRC) |
| 0x1004 | zh-SG | Chinese (Simplified, Singapore) |
| 0x7C04 | zh-Hant | Chinese (Traditional) |
| 0x0C04 | zh-HK | Chinese (Traditional, Hong Kong S.A.R.) |
| 0x1404 | zh-MO | Chinese (Traditional, Macao S.A.R.) |
| 0x0404 | zh-TW | Chinese (Traditional, Taiwan) |
| 0x0083 | co | Corsican |
| 0x0483 | co-FR | Corsican (France) |
| 0x001A | hr | Croatian |
| 0x041A | hr-HR | Croatian (Croatia) |
| 0x101A | hr-BA | Croatian (Latin, Bosnia and Herzegovina) |
| 0x0005 | cs | Czech |
| 0x0405 | cs-CZ | Czech (Czech Republic) |
| 0x0006 | da | Danish |
| 0x0406 | da-DK | Danish (Denmark) |
| 0x008C | prs | Dari |
| 0x048C | prs-AF | Dari (Afghanistan) |
| 0x0065 | dv | Divehi |
| 0x0465 | dv-MV | Divehi (Maldives) |
| 0x0013 | nl | Dutch |
| 0x0813 | nl-BE | Dutch (Belgium) |
| 0x0413 | nl-NL | Dutch (Netherlands) |
| 0x0009 | en | English |
| 0x0C09 | en-AU | English (Australia) |
| 0x2809 | en-BZ | English (Belize) |
| 0x1009 | en-CA | English (Canada) |
| 0x2409 | en-029 | English (Caribbean) |
| 0x4009 | en-IN | English (India) |
| 0x1809 | en-IE | English (Ireland) |
| 0x2009 | en-JM | English (Jamaica) |
| 0x4409 | en-MY | English (Malaysia) |
| 0x1409 | en-NZ | English (New Zealand) |
| 0x3409 | en-PH | English (Republic of the Philippines) |
| 0x4809 | en-SG | English (Singapore) |
| 0x1C09 | en-ZA | English (South Africa) |
| 0x2C09 | en-TT | English (Trinidad and Tobago) |
| 0x0809 | en-GB | English (United Kingdom) |
| 0x0409 | en-US | English (United States) |
| 0x3009 | en-ZW | English (Zimbabwe) |
| 0x0025 | et | Estonian |
| 0x0425 | et-EE | Estonian (Estonia) |
| 0x0038 | fo | Faroese |
| 0x0438 | fo-FO | Faroese (Faroe Islands) |
| 0x0064 | fil | Filipino |
| 0x0464 | fil-PH | Filipino (Philippines) |
| 0x000B | fi | Finnish |
| 0x040B | fi-FI | Finnish (Finland) |
| 0x000C | fr | French |
| 0x080C | fr-BE | French (Belgium) |
| 0x0C0C | fr-CA | French (Canada) |
| 0x040C | fr-FR | French (France) |
| 0x140C | fr-LU | French (Luxembourg) |
| 0x180C | fr-MC | French (Monaco) |
| 0x100C | fr-CH | French (Switzerland) |
| 0x0062 | fy | Frisian |
| 0x0462 | fy-NL | Frisian (Netherlands) |
| 0x0056 | gl | Galician |
| 0x0456 | gl-ES | Galician (Galician) |
| 0x0037 | ka | Georgian |
| 0x0437 | ka-GE | Georgian (Georgia) |
| 0x0007 | de | German |
| 0x0C07 | de-AT | German (Austria) |
| 0x0407 | de-DE | German (Germany) |
| 0x1407 | de-LI | German (Liechtenstein) |
| 0x1007 | de-LU | German (Luxembourg) |
| 0x0807 | de-CH | German (Switzerland) |
| 0x0008 | el | Greek |
| 0x0408 | el-GR | Greek (Greece) |
| 0x006F | kl | Greenlandic |
| 0x046F | kl-GL | Greenlandic (Greenland) |
| 0x0047 | gu | Gujarati |
| 0x0447 | gu-IN | Gujarati (India) |
| 0x0068 | ha | Hausa |
| 0x7C68 | ha-Latn | Hausa (Latin) |
| 0x0468 | ha-Latn-NG | Hausa (Latin, Nigeria) |
| 0x000D | he | Hebrew |
| 0x040D | he-IL | Hebrew (Israel) |
| 0x0039 | hi | Hindi |
| 0x0439 | hi-IN | Hindi (India) |
| 0x000E | hu | Hungarian |
| 0x040E | hu-HU | Hungarian (Hungary) |
| 0x000F | is | Icelandic |
| 0x040F | is-IS | Icelandic (Iceland) |
| 0x0070 | ig | Igbo |
| 0x0470 | ig-NG | Igbo (Nigeria) |
| 0x0021 | id | Indonesian |
| 0x0421 | id-ID | Indonesian (Indonesia) |
| 0x005D | iu | Inuktitut |
| 0x7C5D | iu-Latn | Inuktitut (Latin) |
| 0x085D | iu-Latn-CA | Inuktitut (Latin, Canada) |
| 0x785D | iu-Cans | Inuktitut (Syllabics) |
| 0x045D | iu-Cans-CA | Inuktitut (Syllabics, Canada) |
| 0x003C | ga | Irish |
| 0x083C | ga-IE | Irish (Ireland) |
| 0x0034 | xh | isiXhosa |
| 0x0434 | xh-ZA | isiXhosa (South Africa) |
| 0x0035 | zu | isiZulu |
| 0x0435 | zu-ZA | isiZulu (South Africa) |
| 0x0010 | it | Italian |
| 0x0410 | it-IT | Italian (Italy) |
| 0x0810 | it-CH | Italian (Switzerland) |
| 0x0011 | ja | Japanese |
| 0x0411 | ja-JP | Japanese (Japan) |
| 0x004B | kn | Kannada |
| 0x044B | kn-IN | Kannada (India) |
| 0x003F | kk | Kazakh |
| 0x043F | kk-KZ | Kazakh (Kazakhstan) |
| 0x0053 | km | Khmer |
| 0x0453 | km-KH | Khmer (Cambodia) |
| 0x0086 | qut | K'iche |
| 0x0486 | qut-GT | K'iche (Guatemala) |
| 0x0087 | rw | Kinyarwanda |
| 0x0487 | rw-RW | Kinyarwanda (Rwanda) |
| 0x0041 | sw | Kiswahili |
| 0x0441 | sw-KE | Kiswahili (Kenya) |
| 0x0057 | kok | Konkani |
| 0x0457 | kok-IN | Konkani (India) |
| 0x0012 | ko | Korean |
| 0x0412 | ko-KR | Korean (Korea) |
| 0x0040 | ky | Kyrgyz |
| 0x0440 | ky-KG | Kyrgyz (Kyrgyzstan) |
| 0x0054 | lo | Lao |
| 0x0454 | lo-LA | Lao (Lao P.D.R.) |
| 0x0026 | lv | Latvian |
| 0x0426 | lv-LV | Latvian (Latvia) |
| 0x0027 | lt | Lithuanian |
| 0x0427 | lt-LT | Lithuanian (Lithuania) |
| 0x7C2E | dsb | Lower Sorbian |
| 0x082E | dsb-DE | Lower Sorbian (Germany) |
| 0x006E | lb | Luxembourgish |
| 0x046E | lb-LU | Luxembourgish (Luxembourg) |
| 0x042F | mk-MK | Macedonian (Former Yugoslav Republic of Macedonia) |
| 0x002F | mk | Macedonian (FYROM) |
| 0x003E | ms | Malay |
| 0x083E | ms-BN | Malay (Brunei Darussalam) |
| 0x043E | ms-MY | Malay (Malaysia) |
| 0x004C | ml | Malayalam |
| 0x044C | ml-IN | Malayalam (India) |
| 0x003A | mt | Maltese |
| 0x043A | mt-MT | Maltese (Malta) |
| 0x0081 | mi | Maori |
| 0x0481 | mi-NZ | Maori (New Zealand) |
| 0x007A | arn | Mapudungun |
| 0x047A | arn-CL | Mapudungun (Chile) |
| 0x004E | mr | Marathi |
| 0x044E | mr-IN | Marathi (India) |
| 0x007C | moh | Mohawk |
| 0x047C | moh-CA | Mohawk (Mohawk) |
| 0x0050 | mn | Mongolian (Cyrillic) |
| 0x7850 | mn-Cyrl | Mongolian (Cyrillic) |
| 0x0450 | mn-MN | Mongolian (Cyrillic, Mongolia) |
| 0x7C50 | mn-Mong | Mongolian (Traditional Mongolian) |
| 0x0850 | mn-Mong-CN | Mongolian (Traditional Mongolian, PRC) |
| 0x0061 | ne | Nepali |
| 0x0461 | ne-NP | Nepali (Nepal) |
| 0x0014 | no | Norwegian |
| 0x7C14 | nb | Norwegian (Bokmål) |
| 0x7814 | nn | Norwegian (Nynorsk) |
| 0x0414 | nb-NO | Norwegian, Bokmål (Norway) |
| 0x0814 | nn-NO | Norwegian, Nynorsk (Norway) |
| 0x0082 | oc | Occitan |
| 0x0482 | oc-FR | Occitan (France) |
| 0x0048 | or | Oriya |
| 0x0448 | or-IN | Oriya (India) |
| 0x0063 | ps | Pashto |
| 0x0463 | ps-AF | Pashto (Afghanistan) |
| 0x0029 | fa | Persian |
| 0x0429 | fa-IR | Persian |
| 0x0015 | pl | Polish |
| 0x0415 | pl-PL | Polish (Poland) |
| 0x0016 | pt | Portuguese |
| 0x0416 | pt-BR | Portuguese (Brazil) |
| 0x0816 | pt-PT | Portuguese (Portugal) |
| 0x0046 | pa | Punjabi |
| 0x0446 | pa-IN | Punjabi (India) |
| 0x006B | quz | Quechua |
| 0x046B | quz-BO | Quechua (Bolivia) |
| 0x086B | quz-EC | Quechua (Ecuador) |
| 0x0C6B | quz-PE | Quechua (Peru) |
| 0x0018 | ro | Romanian |
| 0x0418 | ro-RO | Romanian (Romania) |
| 0x0017 | rm | Romansh |
| 0x0417 | rm-CH | Romansh (Switzerland) |
| 0x0019 | ru | Russian |
| 0x0419 | ru-RU | Russian (Russia) |
| 0x0085 | sah | Sakha |
| 0x0485 | sah-RU | Sakha (Russia) |
| 0x703B | smn | Sami (Inari) |
| 0x7C3B | smj | Sami (Lule) |
| 0x003B | se | Sami (Northern) |
| 0x743B | sms | Sami (Skolt) |
| 0x783B | sma | Sami (Southern) |
| 0x243B | smn-FI | Sami, Inari (Finland) |
| 0x103B | smj-NO | Sami, Lule (Norway) |
| 0x143B | smj-SE | Sami, Lule (Sweden) |
| 0x0C3B | se-FI | Sami, Northern (Finland) |
| 0x043B | se-NO | Sami, Northern (Norway) |
| 0x083B | se-SE | Sami, Northern (Sweden) |
| 0x203B | sms-FI | Sami, Skolt (Finland) |
| 0x183B | sma-NO | Sami, Southern (Norway) |
| 0x1C3B | sma-SE | Sami, Southern (Sweden) |
| 0x004F | sa | Sanskrit |
| 0x044F | sa-IN | Sanskrit (India) |
| 0x0091 | gd | Scottish Gaelic |
| 0x0491 | gd-GB | Scottish Gaelic (United Kingdom) |
| 0x7C1A | sr | Serbian |
| 0x6C1A | sr-Cyrl | Serbian (Cyrillic) |
| 0x1C1A | sr-Cyrl-BA | Serbian (Cyrillic, Bosnia and Herzegovina) |
| 0x301A | sr-Cyrl-ME | Serbian (Cyrillic, Montenegro) |
| 0x0C1A | sr-Cyrl-CS | Serbian (Cyrillic, Serbia and Montenegro (Former)) |
| 0x281A | sr-Cyrl-RS | Serbian (Cyrillic, Serbia) |
| 0x701A | sr-Latn | Serbian (Latin) |
| 0x181A | sr-Latn-BA | Serbian (Latin, Bosnia and Herzegovina) |
| 0x2C1A | sr-Latn-ME | Serbian (Latin, Montenegro) |
| 0x081A | sr-Latn-CS | Serbian (Latin, Serbia and Montenegro (Former)) |
| 0x241A | sr-Latn-RS | Serbian (Latin, Serbia) |
| 0x006C | nso | Sesotho sa Leboa |
| 0x046C | nso-ZA | Sesotho sa Leboa (South Africa) |
| 0x0032 | tn | Setswana |
| 0x0432 | tn-ZA | Setswana (South Africa) |
| 0x005B | si | Sinhala |
| 0x045B | si-LK | Sinhala (Sri Lanka) |
| 0x001B | sk | Slovak |
| 0x041B | sk-SK | Slovak (Slovakia) |
| 0x0024 | sl | Slovenian |
| 0x0424 | sl-SI | Slovenian (Slovenia) |
| 0x000A | es | Spanish |
| 0x2C0A | es-AR | Spanish (Argentina) |
| 0x400A | es-BO | Spanish (Bolivia) |
| 0x340A | es-CL | Spanish (Chile) |
| 0x240A | es-CO | Spanish (Colombia) |
| 0x140A | es-CR | Spanish (Costa Rica) |
| 0x1C0A | es-DO | Spanish (Dominican Republic) |
| 0x300A | es-EC | Spanish (Ecuador) |
| 0x440A | es-SV | Spanish (El Salvador) |
| 0x100A | es-GT | Spanish (Guatemala) |
| 0x480A | es-HN | Spanish (Honduras) |
| 0x080A | es-MX | Spanish (Mexico) |
| 0x4C0A | es-NI | Spanish (Nicaragua) |
| 0x180A | es-PA | Spanish (Panama) |
| 0x3C0A | es-PY | Spanish (Paraguay) |
| 0x280A | es-PE | Spanish (Peru) |
| 0x500A | es-PR | Spanish (Puerto Rico) |
| 0x0C0A | es-ES | Spanish (Spain, International Sort) |
| 0x540A | es-US | Spanish (United States) |
| 0x380A | es-UY | Spanish (Uruguay) |
| 0x200A | es-VE | Spanish (Venezuela) |
| 0x001D | sv | Swedish |
| 0x081D | sv-FI | Swedish (Finland) |
| 0x041D | sv-SE | Swedish (Sweden) |
| 0x005A | syr | Syriac |
| 0x045A | syr-SY | Syriac (Syria) |
| 0x0028 | tg | Tajik (Cyrillic) |
| 0x7C28 | tg-Cyrl | Tajik (Cyrillic) |
| 0x0428 | tg-Cyrl-TJ | Tajik (Cyrillic, Tajikistan) |
| 0x005F | tzm | Tamazight |
| 0x7C5F | tzm-Latn | Tamazight (Latin) |
| 0x085F | tzm-Latn-DZ | Tamazight (Latin, Algeria) |
| 0x0049 | ta | Tamil |
| 0x0449 | ta-IN | Tamil (India) |
| 0x0044 | tt | Tatar |
| 0x0444 | tt-RU | Tatar (Russia) |
| 0x004A | te | Telugu |
| 0x044A | te-IN | Telugu (India) |
| 0x001E | th | Thai |
| 0x041E | th-TH | Thai (Thailand) |
| 0x0051 | bo | Tibetan |
| 0x0451 | bo-CN | Tibetan (PRC) |
| 0x001F | tr | Turkish |
| 0x041F | tr-TR | Turkish (Turkey) |
| 0x0042 | tk | Turkmen |
| 0x0442 | tk-TM | Turkmen (Turkmenistan) |
| 0x0022 | uk | Ukrainian |
| 0x0422 | uk-UA | Ukrainian (Ukraine) |
| 0x002E | hsb | Upper Sorbian |
| 0x042E | hsb-DE | Upper Sorbian (Germany) |
| 0x0020 | ur | Urdu |
| 0x0420 | ur-PK | Urdu (Islamic Republic of Pakistan) |
| 0x0080 | ug | Uyghur |
| 0x0480 | ug-CN | Uyghur (PRC) |
| 0x7843 | uz-Cyrl | Uzbek (Cyrillic) |
| 0x0843 | uz-Cyrl-UZ | Uzbek (Cyrillic, Uzbekistan) |
| 0x0043 | uz | Uzbek (Latin) |
| 0x7C43 | uz-Latn | Uzbek (Latin) |
| 0x0443 | uz-Latn-UZ | Uzbek (Latin, Uzbekistan) |
| 0x002A | vi | Vietnamese |
| 0x042A | vi-VN | Vietnamese (Vietnam) |
| 0x0052 | cy | Welsh |
| 0x0452 | cy-GB | Welsh (United Kingdom) |
| 0x0088 | wo | Wolof |
| 0x0488 | wo-SN | Wolof (Senegal) |
| 0x0078 | ii | Yi |
| 0x0478 | ii-CN | Yi (PRC) |
| 0x006A | yo | Yoruba |
| 0x046A | yo-NG | Yoruba (Nigeria) |

#### vPanose

The **vPanose** custom structure specifies a string that contains ten integers separated by space. Those integers are used to specify the typefaces of a font.

The meaning of each integer is specified in the following table.

| Index | Meaning |
| --- | --- |
| 0 | Family Type |
| 1 | Serif Style |
| 2 | Weight |
| 3 | Proportion |
| 4 | Contrast |
| 5 | Stroke Variation |
| 6 | Arm Style |
| 7 | Letterform |
| 8 | Midline |
| 9 | X-height |

#### vThemeString

The **vThemeString** custom structure is a string that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) property.

It MUST be a value from the following table.

| Fixed Theme Property | User Row\_Type | Scheme | Value Type |
| --- | --- | --- | --- |
| TextColor | [msvThemeTextColor](#Section_bb624eb0e8ad4cad942f1e959719832f) | [Color](#Section_086b805c6a154d258e8da691ae277673) | [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) |
| FillColor | [msvThemeFillColor](#Section_a5fd9cbdc664434f82ba0ab1dc7961b0) | Color | PtgColorRGB |
| FillColor2 | msvThemeFillColor2 (section [2.4.3.26](#Section_fc01333e29c14e169c44d5f398dcd1d1)) | Color | PtgColorRGB |
| LineColor | [msvThemeLineColor](#Section_38449cb8c3c84b6b937d33605b07274c) | Color | PtgColorRGB |
| ConnectorColor | [msvThemeConnectorColor](#Section_f55c8ba80f7144a0951066acfb4fca00) | Color | PtgColorRGB |
| ShadowColor | [msvThemeShadowColor](#Section_76570074110d4ba1a6419c9af7617892) | Color | PtgColorRGB |
| AccentColor | [msvThemeAccentColor](#Section_6b7f706cf33c4a39ac68d1387092ea3c) | Color | PtgColorRGB |
| AccentColor2 | [msvThemeAccentColor2](#Section_18b26f1d113940ec8e0d5e712b21b5c3) | Color | PtgColorRGB |
| AccentColor3 | [msvThemeAccentColor3](#Section_994ba3a975594aab9eb4b7c1e281e79c) | Color | PtgColorRGB |
| AccentColor4 | [msvThemeAccentColor4](#Section_89be958d5dde4f41881453db81b51ebc) | Color | PtgColorRGB |
| AccentColor5 | [msvThemeAccentColor5](#Section_1146180ac84c4cbba51553d499740152) | Color | PtgColorRGB |
| BackgroundColor | [msvThemeBackgroundColor](#Section_0b9a3fda1e0c4949b356f044fce86c8b) | Color | PtgColorRGB |
| LatinFont | [msvThemeLatinFont](#Section_741bf00d899a49bd8d1096a3fa12cfd9) | [Effect](#Section_feb16a5f63d442e4aaf73ea74cabef81) | [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) |
| AsianFont | [msvThemeAsianFont](#Section_766f42f976144df6a459f9d378bd83e1) | Effect | vFont |
| ComplexFont | [msvThemeComplexFont](#Section_eae75efd57a04167938548a4c474371e) | Effect | vFont |
| LineTransparency | [msvThemeLineTransparency](#Section_fcce68bfc6894d8696c5e297e13d1a13) | Effect | [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) |
| LinePattern | [msvThemeLinePattern](#Section_e22d5c093d7345d281ef0478079f39c8) | Effect | [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) |
| LineWeight | [msvThemeLineWeight](#Section_239e767c84814baa8ca23a3b668a1a71) | Effect | [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5) |
| LineRounding | [msvThemeLineRounding](#Section_c93b72aaac88457591498a052e3d3e3f) | Effect | [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822) |
| ConnectorTransparency | [msvThemeConnectorTransparency](#Section_f426ebf41cf84d0e9f7d4ac449fcd029) | Effect | PtgNumPct |
| ConnectorPattern | [msvThemeConnectorPattern](#Section_bde2caad445045d6884dff6a1edd9141) | Effect | PtgNum |
| ConnectorWeight | [msvThemeConnectorWeight](#Section_78e5ac31881d4e0baabe55743daa4a91) | Effect | PtgTypPt |
| ConnectorRounding | [msvThemeConnectorRounding](#Section_0fcce4c7d975404ea14bd4e9352646fc) | Effect | PtgNumI |
| ConnectorBegin | [msvThemeConnectorBegin](#Section_8a47c7cc2e544b50bfea39f3daa00487) | Effect | PtgNum |
| ConnectorEnd | [msvThemeConnectorEnd](#Section_ab09e9a8b83640aba11cff0718e4aa63) | Effect | PtgNum |
| ConnectorEnd2 | [msvThemeConnectorEnd2](#Section_e01798aa284a44a7ac9474b09d2a14c6) | Effect | PtgNum |
| ConnectorBeginSize | [msvThemeConnectorBeginSize](#Section_109bf3376a5c4cfba41d131517dbcfa4) | Effect | PtgNum |
| ConnectorEndSize | [msvThemeConnectorEndSize](#Section_833c928f84844f9ba12e3a8ee0729963) | Effect | PtgNum |
| FillTransparency | [msvThemeFillTransparency](#Section_2996966b80764a0fbd1225fa735bb56a) | Effect | PtgNumPct |
| FillPattern | [msvThemeFillPattern](#Section_2183b6b4fcf74c2a820cc16d788fea4a) | Effect | PtgNum |
| ShadowTransparency | [msvThemeShadowTransparency](#Section_4cfb494808564b3aabfea8216423e63f) | Effect | PtgNumPct |
| ShadowPattern | [msvThemeShadowPattern](#Section_4ab3434714c1448fb0a46ee140f1f4a5) | Effect | PtgNum |
| ShadowStyle | [msvThemeShadowStyle](#Section_b6dfcd7abec74dfcba1d92aeb6b3ab7c) | Effect | PtgNum |
| ShadowXOffset | [msvThemeShadowXOffset](#Section_db539770a7994ded86a4ce526c6b470b) | Effect | PtgNumI |
| ShadowYOffset | [msvThemeShadowYOffset](#Section_1cf427c028844e3fbef9f23020197996) | Effect | PtgNumI |
| ShadowMagnification | [msvThemeShadowMagnification](#Section_5261a2b66d6e4ccc9be5912b2cfd47ac) | Effect | PtgNumPct |
| ShadowDirection | [msvThemeShadowDirection](#Section_572deea256e74e30980408e736cd6ce9) | Effect | [PtgAngDD](#Section_75dc4549eb3d4bfc8e3c73cc5345cd1f) |

#### vDynamicThemeString

The **vDynamicThemeString** custom structure is a string that specifies a [dynamic theme](#Section_c9f3f3d72da84f14a1d2c3a8cf9138c9) property.

It MUST be a value from the following table.

| Dynamic Theme Property | Description | Value | User Row\_Type | No Theme |
| --- | --- | --- | --- | --- |
| 0 | Specifies the value of the **dk1** element as specified by the **CT\_Color** type specified in [[ISO/IEC29500-1:2016]](https://go.microsoft.com/fwlink/?linkid=861065) section 20.1.4.1.9 in a dynamic theme, or the value of the structure of the [Value](#Section_4919da7a6e944e0b8a77a96f67544087) [Cell\_Type](#Section_6f23bcc4af934023a3803e78a228e166) child element of an [msvThemeDarkColor](#Section_376445b0db934bbd986119b0c759cb66) [Row\_Type](#Section_7ae7c325097c4225adf5e7b8b6695639) element. | [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) | msvThemeDarkColor | #000000 |
| 1 | Specifies the value of the **lt1** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.22 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeLightColor](#Section_4fa79777c7c34053b22da4a81d714247) Row\_Type element. | PtgColorRGB | msvThemeLightColor | #FFFFFF |
| 2 | Specifies the value of the **accent1** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.1 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeAccentColor](#Section_6b7f706cf33c4a39ac68d1387092ea3c) Row\_Type element. | PtgColorRGB | msvThemeAccentColor | #C05046 |
| 3 | Specifies the value of the **accent2** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeAccentColor2](#Section_18b26f1d113940ec8e0d5e712b21b5c3) Row\_Type element. | PtgColorRGB | msvThemeAccentColor2 | #9DBB61 |
| 4 | Specifies the value of the **accent3** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeAccentColor3](#Section_994ba3a975594aab9eb4b7c1e281e79c) Row\_Type element. | PtgColorRGB | msvThemeAccentColor3 | #AB9AC0 |
| 5 | Specifies the value of the **accent4** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeAccentColor4](#Section_89be958d5dde4f41881453db81b51ebc) Row\_Type element. | PtgColorRGB | msvThemeAccentColor4 | #4BACC6 |
| 6 | Specifies the value of the **accent5** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeAccentColor5](#Section_1146180ac84c4cbba51553d499740152) Row\_Type element. | PtgColorRGB | msvThemeAccentColor5 | #F59D56 |
| 7 | Specifies the value of the **accent6** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeAccentColor6](#Section_eb94319282a34a098aa2a21a5b465ad2) Row\_Type element. | PtgColorRGB | msvThemeAccentColor6 | #FFC000 |
| 8 | Specifies the value of the **bkgnd** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section §A.4.1 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an [msvThemeBackgroundColor](#Section_0b9a3fda1e0c4949b356f044fce86c8b) Row\_Type element. | PtgColorRGB | msvThemeBackgroundColor | #FFFFFF |
| "TextColor" | Specifies the value of the structure of a [Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc) Cell\_Type child element of a Row\_Type element that has a [Character](#Section_4be3913348a54f72976281f67f80da31) [Section\_Type](#Section_735b599d1359476785931c508a885779) parent element in a dynamic theme. | PtgColorRGB | Not applicable | #000000 |
| "FillColor" | Specifies the value of the structure of a [FillForegnd](#Section_50d71b31d16e42739b9da19e2dfa6e09) Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | #96AFCF |
| "FillColor2" | Specifies the value of the structure of a [FillBkgnd](#Section_8c3d69f7de4a47bea209e25e69ea785a) Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | #BFCEE1 |
| "LineColor" | Specifies the value of the structure of a [LineColor](#Section_1ad2684e7fc94cb2857979c3107099f2) Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | #1F477D |
| "ConnectorColor" | Specifies the value of the structure of a LineColor Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | #1F477D |
| "ShadowColor" | Specifies the value of the structure of a [ShdwForegnd](#Section_16a4f382fe564f9f9d15415eb076612d) Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | #464646 |
| "Dark" | Specifies the value of the **dk1** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.9 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeDarkColor Row\_Type element. | PtgColorRGB | msvThemeDarkColor | #000000 |
| "Light" | Specifies the value of the **lt1** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.22 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeLightColor Row\_Type element. | PtgColorRGB | msvThemeLightColor | #FFFFFF |
| "AccentColor" | Specifies the value of the **accent1** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.1.1 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeAccentColor Row\_Type element. | PtgColorRGB | msvThemeAccentColor | #C05046 |
| "AccentColor2" | Specifies the value of the **accent2** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeAccentColor2 Row\_Type element. | PtgColorRGB | msvThemeAccentColor2 | #9DBB61 |
| "AccentColor3" | Specifies the value of the **accent3** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeAccentColor3 Row\_Type element. | PtgColorRGB | msvThemeAccentColor3 | #AB9AC0 |
| "AccentColor4" | Specifies the value of the **accent4** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeAccentColor4 Row\_Type element. | PtgColorRGB | msvThemeAccentColor4 | #4BACC6 |
| "AccentColor5" | Specifies the value of the **accent5** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeAccentColor5 Row\_Type element. | PtgColorRGB | msvThemeAccentColor5 | #F59D56 |
| "AccentColor6" | Specifies the value of the **accent6** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section 20.1.4.12 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeAccentColor6 Row\_Type element. | PtgColorRGB | msvThemeAccentColor6 | #FFC000 |
| "BackgroundColor" | Specifies the value of the **bkgnd** element as specified by the **CT\_Color** type specified in [ISO/IEC29500-1:2016] section §A.4.1 in a dynamic theme, or the value of the structure of the Value Cell\_Type child element of an msvThemeBackgroundColor Row\_Type element. | PtgColorRGB | msvThemeBackgroundColor | #FFFFFF |
| "LatinFont" | Specifies the value of the structure of a [Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5) Cell\_Type element in a dynamic theme. | [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) | Not applicable | Specified by a Font Cell\_Type element in the [root style sheet](#Section_f1fbf67812fb40d4b793aece1c7881a9). |
| "AsianFont" | Specifies the value of the structure of an [AsianFont](#Section_18e2f228bed14e60b64eb2517e657c13) Cell\_Type element in a dynamic theme. | vFont | Not applicable | Specified by an AsianFont Cell\_Type element in the root style sheet. |
| "ComplexFont" | Specifies the value of the structure of a [ComplexScriptFont](#Section_51cdec724a7644a292617ea906fd32b4) Cell\_Type element in a dynamic theme. | vFont | Not applicable | Specified by a ComplexScriptFont Cell\_Type element in the root style sheet. |
| "LineTransparency" | Specifies the value of the structure of a [LineColorTrans](#Section_8d14aed205d146a5a3ce7f65c4837773) Cell\_Type element in a dynamic theme. | [PtgNumPct](#Section_2d9e5d598e0249d5a4bccbc8c406d3af) | Not applicable | Specified by a LineColorTrans Cell\_Type element in the root style sheet. |
| "LinePattern" | Specifies the value of the structure of a [LinePattern](#Section_f718c50060664fcc8b664bb5015f133f) Cell\_Type element in a dynamic theme. | [PtgNum](#Section_7f64df2fdf884411b32281cedbae60c7) | Not applicable | Specified by a LinePattern Cell\_Type element in the root style sheet. |
| "LineWeight" | Specifies the value of the structure of a [LineWeight](#Section_358e71950fb34e338b39b801d79d84a0) Cell\_Type element in a dynamic theme. | [PtgTypPt](#Section_236bed8990fb4120a91478962f363fc5) | Not applicable | Specified by a LineWeight Cell\_Type element in the root style sheet. |
| "LineRounding" | Specifies the value of the structure of a [Rounding](#Section_378bccccbf8446e8a63a0f9881f84ac2) Cell\_Type element in a dynamic theme. | [PtgNumI](#Section_47224e0d0ad141fc9ec33a45cfc83822) | Not applicable | Specified by a Rounding Cell\_Type element in the root style sheet. |
| "LineCap" | Specifies the value of the structure of a [LineCap](#Section_b08a8361c0c14d5f89156810bcedfbc3) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a LineCap Cell\_Type element in the root style sheet. |
| "LineCompoundType" | Specifies the value of the structure of a [CompoundType](#Section_fcd4d7f70582471dbf20a9fdea902696) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a CompoundType Cell\_Type element in the root style sheet. |
| "LineGradientEnabled" | Specifies the value of the structure of a [LineGradientEnabled](#Section_c02f26b3c37d4fdca4272999c81c08d9) Cell\_Type element in a dynamic theme. | [PtgBool](#Section_c15b0e7a59664c1fb2ead6a191fa1998) | Not applicable | Specified by a LineGradientEnabled Cell\_Type element in the root style sheet. |
| "LineGradientDir" | Specifies the value of the structure of a [LineGradientDir](#Section_7e14c089e4914335899f45549724854e) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a LineGradientDir Cell\_Type element in the root style sheet. |
| "LineGradientAngle" | Specifies the value of the structure of a [LineGradientAngle](#Section_0c7abcd3bc604fb6839140bb63100aac) Cell\_Type element in a dynamic theme. | [vAngle](#Section_e147725fd51545e5b83f6d8b09eba52b) | Not applicable | Specified by a LineGradientAngle Cell\_Type element in the root style sheet. |
| "ConnectorTransparency" | Specifies the value of the structure of a LineColorTrans Cell\_Type element in a dynamic theme. | PtgNumPct | Not applicable | Specified by a LineColorTrans Cell\_Type element in the root style sheet. |
| "ConnectorPattern" | Specifies the value of the structure of a LinePattern Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a LinePattern Cell\_Type element in the root style sheet. |
| "ConnectorWeight" | Specifies the value of the structure of a LineWeight Cell\_Type element in a dynamic theme. | PtgTypPt | Not applicable | Specified by a LineWeight Cell\_Type element in the root style sheet. |
| "ConnectorRounding" | Specifies the value of the structure of a Rounding Cell\_Type element in a dynamic theme. | PtgNumI | Not applicable | Specified by a Rounding Cell\_Type element in the root style sheet. |
| "ConnectorBegin" | Specifies the value of the structure of a [BeginArrow](#Section_8f7d58be20e0433b841959add0650616) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a BeginArrow Cell\_Type element in the root style sheet. |
| "ConnectorEnd" | Specifies the value of the structure of a [EndArrow](#Section_d1e61c8bf576429da425447b39935496) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by an EndArrow Cell\_Type element in the root style sheet. |
| "ConnectorBeginSize" | Specifies the value of the structure of a [BeginArrowSize](#Section_9ea88ec87a3e4ea69caaa823f50f0707) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a BeginArrowSize Cell\_Type element in the root style sheet. |
| "ConnectorEndSize" | Specifies the value of the structure of a [EndArrowSize](#Section_c6eef25a120041e5b838f9211941a34f) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by an EndArrowSize Cell\_Type element in the root style sheet. |
| "FillTransparency" | Specifies the value of the structure of a [FillForegndTrans](#Section_444b828fd3da4f06b7ec6c0387ca2a3a) Cell\_Type element in a dynamic theme. | PtgNumPct | Not applicable | Specified by a FillForegndTrans Cell\_Type element in the root style sheet. |
| "FillTransparencyBkgnd" | Specifies the value of the structure of a [FillBkgndTrans](#Section_9d6512e0dca049f6afc6df12931c8fc8) Cell\_Type element in a dynamic theme. | PtgNumPct | Not applicable | Specified by a FillBkgndTrans Cell\_Type element in the root style sheet. |
| "FillPattern" | Specifies the value of the structure of a [FillPattern](#Section_1cd3d15cff2842118c41844affbe30ed) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a FillPattern Cell\_Type element in the root style sheet. |
| "FillGradientEnabled" | Specifies the value of the structure of a [FillGradientEnabled](#Section_ea4b40d27ffc4d1d8801757265752543) Cell\_Type element in a dynamic theme. | PtgBool | Not applicable | Specified by a FillGradientEnabled Cell\_Type element in the root style sheet. |
| "FillGradientDir" | Specifies the value of the structure of a [FillGradientDir](#Section_e19c498a52774add99538b85cb2af250) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a FillGradientDir Cell\_Type element in the root style sheet. |
| "FillGradientAngle" | Specifies the value of the structure of a [FillGradientAngle](#Section_0ed91a89215241c4a2636821e3fa77ff) Cell\_Type element in a dynamic theme. | vAngle | Not applicable | Specified by a FillGradientAngle Cell\_Type element in the root style sheet. |
| "RotateGradientWithShape" | Specifies the value of the structure of a [RotateGradientWithShape](#Section_1d24b5af4cf44513a40617ad4895c292) Cell\_Type element in a dynamic theme. | PtgBool | Not applicable | Specified by a RotateGradientWithShape Cell\_Type element in the root style sheet. |
| "UseGroupGradient" | Specifies the value of the structure of a [UseGroupGradient](#Section_1a823cd4cf594248b78486e06430c3b4) Cell\_Type element in a dynamic theme. | PtgBool | Not applicable | Specified by a UseGroupGradient Cell\_Type element in the root style sheet. |
| "ShadowTransparency" | Specifies the value of the structure of a [ShdwForegndTrans](#Section_7d07c7a152f3491ba133c5ef2dcd051c) Cell\_Type element in a dynamic theme. | PtgNumPct | Not applicable | Specified by a ShdwForegndTrans Cell\_Type element in the root style sheet. |
| "ShadowPattern" | Specifies the value of the structure of a [ShdwPattern](#Section_4bcd0eaf60c84710b955a5fd7158b860) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a ShdwPattern Cell\_Type element in the root style sheet. |
| "ShadowStyle" | Specifies the value of the structure of a [ShapeShdwType](#Section_2130e5954335461a8a75528ad207cab9) Cell\_Type element in a dynamic theme. | [PtgByte](#Section_8629ea6eb5be4161925979f811ff9e4c) | Not applicable | Specified by a ShapeShdwType Cell\_Type element in the root style sheet. |
| "ShadowXOffset" | Specifies the value of the structure of a [ShapeShdwOffsetX](#Section_b2ca039af8e84beeb3e9eaad3ea60259) Cell\_Type element in a dynamic theme. | [vLength](#Section_f809c3999b1c4a688984764d079d153c) | Not applicable | Specified by a ShapeShdwOffsetX Cell\_Type element in the root style sheet. |
| "ShadowYOffset" | Specifies the value of the structure of a [ShapeShdwOffsetY](#Section_5f7e35f838154057965649664c3a06b2) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a ShapeShdwOffsetY Cell\_Type element in the root style sheet. |
| "ShadowMagnification" | Specifies the value of the structure of a [ShapeShdwScaleFactor](#Section_1d6cff997a864e8db19d2c1829e2f282) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a ShapeShdwScaleFactor Cell\_Type element in the root style sheet. |
| "ShadowDirection" | Specifies the value of the structure of a [ShapeShdwObliqueAngle](#Section_169b07fe9c0f403284df725ea631f73f) Cell\_Type element in a dynamic theme. | vAngle | Not applicable | Specified by a ShapeShdwObliqueAngle Cell\_Type element in the root style sheet. |
| "ShadowBlur" | Specifies the value of the structure of a [ShapeShdwBlur](#Section_da304ad0e12b4225a95e36572c787c7b) Cell\_Type element in a dynamic theme. | PtgTypPt | Not applicable | Specified by a ShapeShdwBlur Cell\_Type element in the root style sheet. |
| "BevelTopType" | Specifies the value of the structure of a [BevelTopType](#Section_b78768db00d84e44be4217798c5a6dc0) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a BevelTopType Cell\_Type element in the root style sheet. |
| "BevelTopWidth" | Specifies the value of the structure of a [BevelTopWidth](#Section_903a8d7c15a14efa9e8d68933d64e7de) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a BevelTopWidth Cell\_Type element in the root style sheet. |
| "BevelTopHeight" | Specifies the value of the structure of a [BevelTopHeight](#Section_0614ed0e76a7400a955dff1766769c54) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a BevelTopHeight Cell\_Type element in the root style sheet. |
| "BevelContourColor" | Specifies the value of the structure of a [BevelContourColor](#Section_02cefb0379404adf9d2c670e8b1932c1) Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a BevelContourColor Cell\_Type element in the root style sheet. |
| "BevelContourSize" | Specifies the value of the structure of a [BevelContourSize](#Section_a362bb43b6ea48f09f48b4224a44b211) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a BevelContourSize Cell\_Type element in the root style sheet. |
| "BevelMaterial" | Specifies the value of the structure of a [BevelMaterialType](#Section_339e96d50bd946d39a3054b93adb3457) Cell\_Type element in a dynamic theme. | PtgByte | Not applicable | Specified by a BevelMaterialType Cell\_Type element in the root style sheet. |
| "BevelLightingType" | Specifies the value of the structure of a [BevelLightingType](#Section_f34790153f9c43b1a7106b55e2c79f83) Cell\_Type element in a dynamic theme. | PtgByte | Not applicable | Specified by a BevelLightingType Cell\_Type element in the root style sheet. |
| "BevelLightingAngle" | Specifies the value of the structure of a [BevelLightingAngle](#Section_aca57aa548b7464eaba5a44ea5d370a1) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a BevelLightingAngle Cell\_Type element in the root style sheet. |
| "GlowSize" | Specifies the value of the structure of a [GlowSize](#Section_acb99b53189d4d65a92f7239171c2f0b) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a GlowSize Cell\_Type element in the root style sheet. |
| "GlowColor" | Specifies the value of the structure of a [GlowColor](#Section_a8ef555afe054a6083827ce580f49202) Cell\_Type element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GlowColor Cell\_Type element in the root style sheet. |
| "GlowColorTrans" | Specifies the value of the structure of a [GlowColorTrans](#Section_0a7e9d86f52143f0b8a1d86a41ff33b0) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a GlowColorTrans Cell\_Type element in the root style sheet. |
| "ReflectionBlur" | Specifies the value of the structure of a [ReflectionBlur](#Section_3a1cfddd550e410c953802bd092d7114) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a ReflectionBlur Cell\_Type element in the root style sheet. |
| "ReflectionDist" | Specifies the value of the structure of a [ReflectionDist](#Section_dd2a36036ffb47f98f47c6cf866f069d) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a ReflectionDist Cell\_Type element in the root style sheet. |
| "ReflectionSize" | Specifies the value of the structure of a [ReflectionSize](#Section_25ae2a5a2f2f40adb59af410000414d7) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a ReflectionSize Cell\_Type element in the root style sheet. |
| "ReflectionTrans" | Specifies the value of the structure of a [ReflectionTrans](#Section_54ac8196234b463e8ea84646d5044cb0) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a ReflectionTrans Cell\_Type element in the root style sheet. |
| "SoftEdgesSize" | Specifies the value of the structure of a [SoftEdgesSize](#Section_768a404663c742cf8f3d11f85a275235) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a SoftEdgesSize Cell\_Type element in the root style sheet. |
| "SketchAmount" | Specifies the value of the structure of a [SketchAmount](#Section_ef519b3920ed481c87572ca63854a67b) Cell\_Type element in a dynamic theme. | [PtgInt](#Section_1887fdf908d14280a221a0f021d96970) | Not applicable | Specified by a SketchAmount Cell\_Type element in the root style sheet. |
| "SketchEnabled" | Specifies the value of the structure of a [SketchEnabled](#Section_a434c9a2c2e3478b95b97a5170331148) Cell\_Type element in a dynamic theme. | PtgBool | Not applicable | Specified by a SketchEnabled Cell\_Type element in the root style sheet. |
| "SketchFillChange" | Specifies the value of the structure of a [SketchFillChange](#Section_2990c30ac2b7492d89c6f4184f344739) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a SketchFillChange Cell\_Type element in the root style sheet. |
| "SketchLineChange" | Specifies the value of the structure of a [SketchLineChange](#Section_a0005aaa67814606995746b07d65972c) Cell\_Type element in a dynamic theme. | PtgNum | Not applicable | Specified by a SketchLineChange Cell\_Type element in the root style sheet. |
| "SketchLineWeight" | Specifies the value of the structure of a [SketchLineWeight](#Section_f413e8f6ad9e41e4b2f916ab32cd14c1) Cell\_Type element in a dynamic theme. | vLength | Not applicable | Specified by a SketchLineWeight Cell\_Type element in the root style sheet. |
| "LineStop1Color" | Specifies the value of the structure of a [GradientStopColor](#Section_0cdc9974a63a446fbbf038827d4631b8) Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a [LineGradient](#Section_e0e40508768a4956ac743f7783a4d397) Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop1Transparency" | Specifies the value of the structure of a [GradientStopColorTrans](#Section_a75e10d1bcf04e608418b56381a9ee5c) Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop1Position" | Specifies the value of the structure of a [GradientStopPosition](#Section_64030657ec1c4bcdadbb701bb24004fa) Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop2Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop2Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop2Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop3Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop3Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop3Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop4Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop4Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop4Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop5Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop5Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop5Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop6Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop6Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop6Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop7Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop7Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop7Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop8Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop8Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop8Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop9Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop9Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop9Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop10Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop10Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a LineGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "LineStop10Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a LineGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 10 that has a LineGradient Section\_Type parent element in the root style sheet. |
| "FillStop1Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a [FillGradient](#Section_d758c260fc284bd48f3abeb9669901b2) Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop1Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop1Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to zero that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop2Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop2Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop2Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to one that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop3Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to two that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop3Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop3Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 2 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop4Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop4Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop4Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 3 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop5Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop5Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop5Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 4 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop6Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop6Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop6Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 5 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop7Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop7Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop7Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 6 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop8Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop8Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop8Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 7 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop9Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop9Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop9Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 8 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop10Color" | Specifies the value of the structure of a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgColorRGB | Not applicable | Specified by a GradientStopColor Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop10Transparency" | Specifies the value of the structure of a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a FillGradient Section\_Type parent element in a dynamic theme. | PtgNum | Not applicable | Specified by a GradientStopColorTrans Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a FillGradient Section\_Type parent element in the root style sheet. |
| "FillStop10Position" | Specifies the value of the structure of a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a FillGradient Section\_Type parent element in a dynamic theme. | vLength | Not applicable | Specified by a GradientStopPosition Cell\_Type child element of a Row\_Type element whose **IX** attribute value is equal to 9 that has a FillGradient Section\_Type parent element in the root style sheet. |

#### vThemeColor

The **vThemeColor** custom structure is a [PtgColorRGB](#Section_d63535a566444a6faab1a436c157e546) that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) fixed color scheme.

Fixed theme property values for each of the fixed color schemes are specified in the following table.

| Fixed Theme Index | Text Color | Fill Color | Fill Color 2 | Line Color | Connector Color | Shadow Color |
| --- | --- | --- | --- | --- | --- | --- |
| 0 | #000000 | #96AFCF | #BFCEE1 | #1F477D | #1F477D | #464646 |
| 1 | #000000 | #FFFFFF | #EAEAEA | #000000 | #000000 | #C0C0C0 |
| 2 | #000000 | #9AB3D1 | #C4D2E3 | #1F497D | #1F497D | #464646 |
| 3 | #000000 | #A0BFD8 | #BBD0E1 | #69544B | #775F55 | #827068 |
| 4 | #000000 | #6AC5DB | #8CD2E3 | #464646 | #464646 | #464646 |
| 5 | #000000 | #6FBBCE | #A0D1DE | #4F271C | #4F271C | #7E6C67 |
| 6 | #000000 | #8FB6C2 | #A8C7D0 | #3B3B3B | #3B3B3B | #ABABAD |
| 7 | #000000 | #A5B592 | #C0CBB4 | #444D26 | #444D26 | #444D26 |
| 8 | #000000 | #95B998 | #ADC9AF | #676A55 | #676A55 | #868A6F |
| 9 | #000000 | #CAB86F | #DCCD92 | #525056 | #5C5A61 | #7D7B82 |
| 10 | #000000 | #EEAF51 | #F2C179 | #4E3B30 | #4E3B30 | #745847 |
| 11 | #000000 | #F0AD00 | #FFC733 | #5A6378 | #5A6378 | #5A6378 |
| 12 | #000000 | #FB944F | #FFAD77 | #575F6D | #575F6D | #7A838F |
| 13 | #000000 | #F89430 | #FAB067 | #323232 | #323232 | #626262 |
| 14 | #000000 | #ED744B | #F19272 | #696464 | #696464 | #696464 |
| 15 | #000000 | #D16349 | #E19A88 | #646B86 | #646B86 | #464646 |
| 16 | #000000 | #BF8096 | #D1A5B5 | #653445 | #3C1C31 | #202020 |
| 17 | #000000 | #FDA4CA | #FFCEE3 | #620027 | #790031 | #606060 |
| 18 | #000000 | #A3ABCD | #B5BACE | #46465D | #46465D | #6F6F84 |
| 19 | #000000 | #9C9DC7 | #BCBDDA | #444444 | #444444 | #444444 |
| 20 | #000000 | #82B4E1 | #91C6F7 | #000000 | #000000 | #1C4E5B |
| 21 | #000000 | #7FD13B | #6DBD2D | #000000 | #4E5B6F | #5E646F |
| 22 | #000000 | #9AB3D1 | #C6D3E3 | #1F497D | #1F497D | #576980 |
| 23 | #FFFFFF | #4F81BD | #4172AD | #EEECE1 | #EEECE1 | #000000 |
| 24 | #000000 | #A0BFD8 | #BBD0E1 | #69544B | #775F55 | #827068 |
| 25 | #FFFFFF | #94B6D2 | #77A2C4 | #EBDDC3 | #EBDDC3 | #1F497D |
| 26 | #000000 | #6AC5DB | #8CD2E3 | #464646 | #464646 | #464646 |
| 27 | #FFFFFF | #2DA2BF | #25869E | #DEF5FA | #DEF5FA | #000000 |
| 28 | #000000 | #A5B592 | #C0CBB4 | #444D26 | #444D26 | #444D26 |
| 29 | #FFFFFF | #A5B592 | #B9C5AB | #FEFAC9 | #FEFAC9 | #000000 |
| 30 | #000000 | #95B998 | #ADC9AF | #676A55 | #676A55 | #868A6F |
| 31 | #FFFFFF | #72A376 | #6C886F | #EAEBDE | #EAEBDE | #000000 |
| 32 | #000000 | #ED744B | #F19272 | #696464 | #696464 | #696464 |
| 33 | #FFFFFF | #D34817 | #B6421B | #E9E5DC | #E9E5DC | #000000 |
| 34 | #000000 | #FDA4CA | #FFCEE3 | #620027 | #790031 | #606060 |
| 35 | #FFFFFF | #FF388C | #FF599F | #D2D2D2 | #D2D2D2 | #000000 |
| 36 | #000000 | #FFFFFF | #F0F0F0 | #404040 | #404040 | #CDCDCD |
| 37 | #000000 | #A9A57C | #C2C0A3 | #7B7859 | #7B7859 | #7B7859 |
| 38 | #FFFFFF | #797B7E | #9B9D9F | #CDD7D9 | #CDD7D9 | #000000 |
| 39 | #000000 | #93A299 | #B3BDB7 | #6B766F | #6B766F | #6B766F |
| 40 | #000000 | #94C600 | #C0FF02 | #6B9100 | #6B9100 | #6B9100 |
| 41 | #000000 | #7A7A7A | #A7A7A7 | #585858 | #585858 | #585858 |
| 42 | #FFFFFF | #6F6F74 | #A7A7A7 | #E3DCCF | #E3DCCF | #A7A7A7 |
| 43 | #000000 | #98C723 | #BBE155 | #6E9217 | #6E9217 | #6E9217 |
| 44 | #000000 | #93A299 | #ADB8B1 | #6B766F | #6B766F | #6B766F |
| 45 | #FFFFFF | #629DD1 | #98BEE0 | #ACCBF9 | #ACCBF9 | #000000 |
| 46 | #FFFFFF | #6076B4 | #8A9AC8 | #E4E9EF | #E4E9EF | #000000 |
| 47 | #000000 | #C66951 | #D89685 | #914B39 | #914B39 | #914B39 |
| 48 | #FFFFFF | #873624 | #CC5840 | #ECE9C6 | #ECE9C6 | #000000 |
| 49 | #000000 | #7E97AD | #9FB1C1 | #5B6E7E | #5B6E7E | #5B6E7E |
| 50 | #FFFFFF | #AD0101 | #FE0707 | #DEDEE0 | #DEDEE0 | #000000 |
| 51 | #000000 | #9E8E5C | #B4A77E | #736741 | #736741 | #736741 |
| 52 | #FFFFFF | #838D9B | #A6ADB7 | #5F6671 | #5F6671 | #000000 |
| 53 | #000000 | #FDA023 | #FEB858 | #975E11 | #975E11 | #975E11 |
| 54 | #FFFFFF | #4E67C8 | #8091D7 | #B4DCFA | #B4DCFA | #000000 |
| 55 | #FFFFFF | #759AA5 | #92AFB8 | #DFE6D0 | #DFE6D0 | #000000 |
| 56 | #000000 | #31B6FD | #68C9FD | #165D83 | #165D83 | #165D83 |

| Fixed Theme Index | Accent Color | Accent Color 2 | Accent Color 3 | Accent Color 4 | Accent Color 5 | Background Color |
| --- | --- | --- | --- | --- | --- | --- |
| 0 | #C05046 | #9DBB61 | #AB9AC0 | #4BACC6 | #F59D56 | #FFFFFF |
| 1 | #DDDDDD | #C0C0C0 | #B2B2B2 | #969696 | #808080 | #FFFFFF |
| 2 | #CE7977 | #A5C06B | #AB9AC0 | #69BBCF | #F89C52 | #FFFFFF |
| 3 | #DD8047 | #A5AB81 | #D8B25C | #7BA79D | #968C8C | #FFFFFF |
| 4 | #EB747A | #F08E59 | #729CD6 | #8A9ECE | #B96F80 | #FFFFFF |
| 5 | #FDC022 | #DD6868 | #9FBD62 | #D07837 | #768AB8 | #FFFFFF |
| 6 | #EDCB0C | #9F9CB1 | #9DAC8A | #ABA085 | #979CA4 | #FFFFFF |
| 7 | #F3A447 | #E7BC29 | #D092A7 | #9C85C0 | #809EC2 | #FFFFFF |
| 8 | #B0CCB0 | #A8CDD7 | #C0BEAF | #CEC597 | #E8B7B7 | #FFFFFF |
| 9 | #A0B489 | #74B7CD | #7592D5 | #8573CC | #B78AC4 | #FFFFFF |
| 10 | #BB846F | #B99288 | #C3986D | #A99E81 | #D39556 | #FFFFFF |
| 11 | #60B5CC | #E66C7D | #6BB76D | #E88651 | #C64847 | #FFFFFF |
| 12 | #8CA9DF | #E9725C | #F3D14B | #B5BFD9 | #8A8E95 | #FFFFFF |
| 13 | #CE5977 | #73A6C4 | #7DAE73 | #8D76A5 | #BD975E | #FFFFFF |
| 14 | #DD6453 | #A79C9D | #AF7E6D | #986D6D | #AB9978 | #FFFFFF |
| 15 | #CCB400 | #8CADAE | #8C7B70 | #8FB08C | #D19049 | #FFFFFF |
| 16 | #B678C2 | #DE6C36 | #F9C18A | #D195C0 | #FA9970 | #FFFFFF |
| 17 | #FF4A93 | #E659D5 | #C586E3 | #69A6F8 | #89A4DC | #FFFFFF |
| 18 | #9FB8CD | #D2DA7A | #FADA7A | #B88472 | #A28A82 | #FFFFFF |
| 19 | #97C7CC | #BE78C0 | #D28759 | #B57C57 | #7EA9C5 | #FFFFFF |
| 20 | #09B0F0 | #0ED6E0 | #12DEA6 | #7CC97A | #ABC55F | #FFFFFF |
| 21 | #F059A0 | #FEB80A | #52C9BA | #37BEE6 | #8EA2D2 | #FFFFFF |
| 22 | #CF7A78 | #A6C269 | #AB9AC0 | #69BBCF | #F89C52 | #EEECE1 |
| 23 | #C0504D | #9BBB59 | #8064A2 | #4BACC6 | #F79646 | #1F497D |
| 24 | #DD8047 | #A5AB81 | #D8B25C | #7BA79D | #968C8C | #EBDDC3 |
| 25 | #DD8047 | #A5AB81 | #D8B25C | #7BA79D | #968C8C | #775F55 |
| 26 | #EB747A | #F08E59 | #729CD6 | #8A9ECE | #B96F80 | #DEF5FA |
| 27 | #DA1F28 | #EB641B | #39639D | #474B78 | #7D3C4A | #464646 |
| 28 | #F3A447 | #E7BC29 | #D092A7 | #9C85C0 | #809EC2 | #FEFAC9 |
| 29 | #F3A447 | #E7BC29 | #D092A7 | #9C85C0 | #809EC2 | #444D26 |
| 30 | #B0CCB0 | #A8CDD7 | #C0BEAF | #CEC597 | #E8B7B7 | #EAEBDE |
| 31 | #B0CCB0 | #A8CDD7 | #C0BEAF | #CEC597 | #E8B7B7 | #676A55 |
| 32 | #DD6453 | #A79C9D | #AF7E6D | #986D6D | #AB9978 | #E9E5DC |
| 33 | #9B2D1F | #918485 | #956251 | #855D5D | #A28E6A | #696464 |
| 34 | #FF4A93 | #E659D5 | #C586E3 | #69A6F8 | #89A4DC | #D2D2D2 |
| 35 | #E40059 | #9C007F | #68007F | #005BD3 | #00349E | #666666 |
| 36 | #EA9651 | #B3C283 | #6B9BC7 | #4E66B2 | #8976AC | #FFFFFF |
| 37 | #9CBEBD | #D2CB6C | #95A39D | #C89F5D | #B1A089 | #FFFFFF |
| 38 | #F96A1B | #08A1D9 | #7C984A | #C2AD8D | #506E94 | #434342 |
| 39 | #CF543F | #B5AE53 | #848058 | #E8B54D | #786C71 | #FFFFFF |
| 40 | #71685A | #FF6700 | #909465 | #956B43 | #FEA022 | #FFFFFF |
| 41 | #F5C201 | #526DB0 | #989AAC | #DC5924 | #B4B392 | #FFFFFF |
| 42 | #A7B789 | #BEAE98 | #92A9B9 | #9C8265 | #8D6974 | #000000 |
| 43 | #59B0B9 | #DEAE00 | #B77BB4 | #E0773C | #A98D63 | #FFFFFF |
| 44 | #AD8F67 | #726056 | #4C5A6A | #808DA0 | #79463D | #FFFFFF |
| 45 | #297FD5 | #7F8FA9 | #4A66AC | #5AA2AE | #9D90A0 | #242852 |
| 46 | #9C5252 | #E68422 | #846648 | #63891F | #758085 | #2F5897 |
| 47 | #BF974D | #928B70 | #87706B | #94734E | #6F777D | #FFFFFF |
| 48 | #D6862D | #D0BE40 | #877F6C | #972109 | #AEB795 | #895D1D |
| 49 | #CC8E60 | #7A6A60 | #B4936D | #67787B | #9D936F | #FFFFFF |
| 50 | #726056 | #AC956E | #808DA9 | #424E5B | #730E00 | #303030 |
| 51 | #A09781 | #85776D | #AEAFA9 | #8D878B | #6B6149 | #FFFFFF |
| 52 | #D2610C | #80716A | #94147C | #5D5AD2 | #6F6C7D | #283138 |
| 53 | #AA2B1E | #71685C | #64A73B | #EB5605 | #B9CA1A | #FFFFFF |
| 54 | #5ECCF3 | #A7EA52 | #5DCEAF | #FF8021 | #F14124 | #212745 |
| 55 | #CFC60D | #99987F | #90AC97 | #FFAD1C | #B9AB6F | #1D3641 |
| 56 | #4584D3 | #5BD078 | #A5D028 | #F5C040 | #05E0DB | #FFFFFF |

#### vThemeEffect

The **vThemeEffect** custom structure is a [vNum](#Section_40645a2108cc43a38b42bfb643bc76ed) or [vFont](#Section_a6f3507849ba4f87a7b8e62e87a96ccc) that specifies a [fixed theme](#Section_f0c63ffd3d6049868a968d334f793281) fixed effect scheme.

Fixed theme property values for each of the fixed effect schemes are specified in the following table. Asian Font and Complex Script Font property values vary based on the **Language** property of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9), specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML Part](#Section_f7c9761b3ff14dd59319ebd0af457c99), and are specified in the [Asian and Complex Font Properties](#Section_0aa51303db624d8292a2a5ae42cf1e4e) section.

| Fixed Theme Index | 0 | 1 | 2 | 3 | 4 |
| --- | --- | --- | --- | --- | --- |
| Latin Font | Calibri | Arial | Calibri | Arial | Arial |
| Asian Font | Asian and Complex Font Properties | | | | |
| Complex Font |
| Line Transparency | 0 | 0.35 | 0 | 0 | 0 |
| Line Pattern | 1 | 1 | 1 | 1 | 1 |
| Line Weight | 0.003472222 | 0.000694444 | 0.003472222 | 0.016666667 | 0.006944444 |
| Line Rounding | 0 | 0 | 0 | 0.0625 | 0 |
| Connector Transparency | 0 | 0.25 | 0 | 0 | 0 |
| Connector Pattern | 1 | 1 | 1 | 1 | 1 |
| Connector Weight | 0.003472222 | 0.010416667 | 0.013888889 | 0.013888889 | 0.003472222 |
| Connector Rounding | 0 | 0 | 0 | 0.0625 | 0 |
| Connector Begin | 0 | 0 | 0 | 0 | 0 |
| Connector End | 4 | 4 | 5 | 5 | 4 |
| Connector End 2 | 4 | 4 | 5 | 5 | 4 |
| Connector Begin Size | 2 | 1 | 2 | 2 | 2 |
| Connector End Size | 2 | 1 | 2 | 4 | 2 |
| Fill Transparency | 0 | 0.15 | 0 | 0 | 0 |
| Fill Pattern | 1 | 1 | 28 | 36 | 30 |
| Shadow Transparency | 0 | 0 | 0.5 | 0.6 | 0.5 |
| Shadow Pattern | 0 | 0 | 1 | 1 | 1 |
| Shadow Style | 0 | 0 | 1 | 1 | 13 |
| Shadow Offset X | 0 | 0.125 | 0.02 | 0.025 | 0 |
| Shadow Offset Y | 0 | -0.125 | -0.02 | -0.025 | -0.03 |
| Shadow Magnification | 1 | 1 | 1 | 1 | 1 |
| Shadow Direction | 0 | 0 | 0 | 0 | 0 |

| Fixed Theme Index | 5 | 6 | 7 | 8 | 9 |
| --- | --- | --- | --- | --- | --- |
| Latin Font | Cambria | Arial Rounded MT Bold | Corbel | Trebuchet MS | Trebuchet MS |
| Asian Font | Asian and Complex Font Properties | | | | |
| Complex Font |
| Line Transparency | 0.25 | 0 | 0 | 0 | 0.8 |
| Line Pattern | 1 | 1 | 1 | 1 | 1 |
| Line Weight | 0.013888889 | 0.022916667 | 0.010416667 | 0.03125 | 0.041666667 |
| Line Rounding | 0.0875 | 0.0173 | 0.0925 | 0 | 0.0625 |
| Connector Transparency | 0.25 | 0 | 0 | 0 | 0 |
| Connector Pattern | 1 | 1 | 1 | 1 | 1 |
| Connector Weight | 0.013888889 | 0.016666667 | 0.010416667 | 0.020833333 | 0.016666667 |
| Connector Rounding | 0.0875 | 0.0173 | 0.0925 | 0 | 0 |
| Connector Begin | 0 | 0 | 0 | 0 | 0 |
| Connector End | 5 | 2 | 8 | 4 | 4 |
| Connector End 2 | 5 | 2 | 8 | 4 | 4 |
| Connector Begin Size | 0 | 3 | 2 | 2 | 2 |
| Connector End Size | 0 | 3 | 2 | 2 | 2 |
| Fill Transparency | 0 | 0.35 | 0.35 | 0 | 0 |
| Fill Pattern | 29 | 39 | 39 | 37 | 8 |
| Shadow Transparency | 0 | 0.75 | 0.7 | 0.35 | 0.35 |
| Shadow Pattern | 0 | 1 | 1 | 0 | 1 |
| Shadow Style | 0 | 1 | 1 | 0 | 1 |
| Shadow Offset X | 0.125 | 0.0425 | 0.03 | 0.125 | 0.012 |
| Shadow Offset Y | -0.125 | -0.0425 | -0.03 | -0.125 | -0.012 |
| Shadow Magnification | 1 | 0.98 | 0.99 | 1 | 1 |
| Shadow Direction | 0 | 0 | 0 | 0 | 0 |

| Fixed Theme Index | 10 | 11 | 12 | 13 | 14 |
| --- | --- | --- | --- | --- | --- |
| Latin Font | Arial | Franklin Gothic Demi | Constantia | Arial | Verdana |
| Asian Font | Asian and Complex Font Properties | | | | |
| Complex Font |
| Line Transparency | 0.4 | 0 | 0 | 0.3 | 0 |
| Line Pattern | 1 | 1 | 1 | 1 | 1 |
| Line Weight | 0.024305556 | 0.013888889 | 0.010416667 | 0.016666667 | 0.020833333 |
| Line Rounding | 0 | 0.0625 | 0 | 0.0625 | 0.035 |
| Connector Transparency | 0.3 | 0 | 0 | 0 | 0.15 |
| Connector Pattern | 1 | 23 | 1 | 10 | 1 |
| Connector Weight | 0.010416667 | 0.003472222 | 0.003472222 | 0.016666667 | 0.020833333 |
| Connector Rounding | 0 | 0.0625 | 0.0625 | 0.0625 | 0.035 |
| Connector Begin | 0 | 0 | 11 | 0 | 0 |
| Connector End | 13 | 5 | 4 | 11 | 4 |
| Connector End 2 | 13 | 5 | 4 | 11 | 4 |
| Connector Begin Size | 0 | 3 | 1 | 0 | 0 |
| Connector End Size | 0 | 3 | 2 | 0 | 0 |
| Fill Transparency | 0.25 | 0.15 | 0 | 0.2 | 0 |
| Fill Pattern | 8 | 24 | 20 | 19 | 1 |
| Shadow Transparency | 0.65 | 0.5 | 0.5 | 0.7 | 0.65 |
| Shadow Pattern | 1 | 0 | 0 | 0 | 1 |
| Shadow Style | 1 | 1 | 0 | 1 | 2 |
| Shadow Offset X | 0.02 | 0.0625 | 0.0625 | 0.0625 | 0 |
| Shadow Offset Y | -0.02 | -0.0625 | -0.0625 | -0.0625 | 0 |
| Shadow Magnification | 1 | 1 | 1 | 1 | 0.35 |
| Shadow Direction | 0 | 0 | 0 | 0 | 1.308996939 |

| Fixed Theme Index | 15 | 16 |
| --- | --- | --- |
| Latin Font | Arial Rounded MT Bold | Calibri |
| Asian Font | Asian and Complex Font Properties | |
| Complex Font |
| Line Transparency | 0 | 0 |
| Line Pattern | 1 | 1 |
| Line Weight | 0.003472222 | 0.003472222 |
| Line Rounding | 0.125 | 0 |
| Connector Transparency | 0 | 0 |
| Connector Pattern | 1 | 1 |
| Connector Weight | 0.010416667 | 0.013888889 |
| Connector Rounding | 0.3125 | 0 |
| Connector Begin | 10 | 0 |
| Connector End | 10 | 5 |
| Connector End 2 | 10 | 5 |
| Connector Begin Size | 1 | 2 |
| Connector End Size | 3 | 2 |
| Fill Transparency | 0 | 0 |
| Fill Pattern | 28 | 30 |
| Shadow Transparency | 0 | 0.5 |
| Shadow Pattern | 0 | 1 |
| Shadow Style | 1 | 1 |
| Shadow Offset X | 0.0625 | 0.02 |
| Shadow Offset Y | -0.0625 | -0.02 |
| Shadow Magnification | 1 | 1 |
| Shadow Direction | 0 | 0 |

##### Asian and Complex Font Properties

The Asian Font and Complex Script Font property values are determined based on the [[ISO-15924]](https://go.microsoft.com/fwlink/?LinkId=100295) script tag of the **Language** property, specified in [[ISO/IEC29500-2:2012]](https://go.microsoft.com/fwlink/?LinkID=330448) section 11, from the [Core XML Part](#Section_f7c9761b3ff14dd59319ebd0af457c99) of a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9).

To lookup which font is used for a fixed effect scheme, map the script tag from the first column to the fixed theme index in the first row. The values of the cells in this table correspond to font indexes in the following table.

| Script Tag | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| HANS | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 2 | 1 | 1 | 0 | 0 | 3 | 0 | 1 | 0 | 1 |
| HANT | 0 | 4 | 4 | 4 | 4 | 5 | 4 | 5 | 4 | 4 | 4 | 4 | 5 | 4 | 4 | 4 | 4 |
| JPAN | 0 | 6 | 6 | 6 | 6 | 7 | 8 | 9 | 12 | 12 | 6 | 11 | 10 | 6 | 6 | 8 | 6 |
| HANG | 0 | 14 | 15 | 14 | 14 | 15 | 14 | 16 | 18 | 18 | 14 | 16 | 17 | 14 | 14 | 14 | 15 |
| ARAB | 0 | 25 | 21 | 25 | 25 | 21 | 24 | 25 | 24 | 24 | 25 | 24 | 21 | 25 | 24 | 24 | 21 |
| HEBR | 0 | 25 | 26 | 25 | 25 | 21 | 25 | 26 | 30 | 30 | 25 | 29 | 28 | 25 | 31 | 29 | 26 |
| THAI | 0 | 33 | 34 | 33 | 33 | 35 | 33 | 37 | 40 | 40 | 33 | 39 | 38 | 33 | 40 | 33 | 34 |
| ETHI | 0 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 | 41 |
| BENG | 0 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 | 42 |
| GUJR | 0 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 | 43 |
| KHMR | 0 | 45 | 45 | 45 | 44 | 45 | 44 | 44 | 45 | 44 | 45 | 45 | 45 | 44 | 44 | 45 | 45 |
| KNDA | 0 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 | 46 |
| GURU | 0 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 | 47 |
| CANS | 0 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 | 48 |
| CHER | 0 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| YIII | 0 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| TIBT | 0 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 | 51 |
| THAA | 0 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 | 52 |
| DEVA | 0 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 53 |
| TELU | 0 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| TAML | 0 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 | 36 |
| SYRC | 0 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 | 19 |
| ORYA | 0 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| MLYM | 0 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 | 22 |
| LAOO | 0 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 | 23 |
| SINH | 0 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 | 27 |
| MONG | 0 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 | 32 |
| VIET | 0 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 | 21 |
| UIGH | 0 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 | 54 |
| GEOR | 0 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 | 55 |

| Font Index | Font |
| --- | --- |
| 0 | 黑体 |
| 1 | 宋体 |
| 2 | KaiTi\_GB2312 |
| 3 | FangSong\_GB2312 |
| 4 | Microsoft JhengHei |
| 5 | PMingLiU |
| 6 | MS PGothic |
| 7 | MS PMincho |
| 8 | HGMaruGothicMPRO |
| 9 | HGSoeiKakupoptai |
| 10 | HGMinchoE |
| 11 | HGSoeiKakugothicUB |
| 12 | HGGothicM |
| 13 | Gautami |
| 14 | Gulim |
| 15 | Malgun Gothic |
| 16 | Dotum |
| 17 | Batang |
| 18 | HYGothic-Extra |
| 19 | Estrangelo Edessa |
| 20 | Kalinga |
| 21 | Times New Roman |
| 22 | Kartika |
| 23 | DokChampa |
| 24 | Tahoma |
| 25 | Arial |
| 26 | Levenim MT |
| 27 | Iskoola Pota |
| 28 | David |
| 29 | Aharoni |
| 30 | Miriam |
| 31 | Courier New |
| 32 | Mongolian Baiti |
| 33 | Cordia New |
| 34 | Browallia New |
| 35 | Angsana New |
| 36 | Latha |
| 37 | DilleniaUPC |
| 38 | EucrosiaUPC |
| 39 | JasmineUPC |
| 40 | FreesiaUPC |
| 41 | Nyala |
| 42 | Vrinda |
| 43 | Shruti |
| 44 | MoolBoran |
| 45 | DaunPenh |
| 46 | Tunga |
| 47 | Raavi |
| 48 | Euphemia |
| 49 | Plantagenet Cherokee |
| 50 | Microsoft Yi Baiti |
| 51 | Microsoft Himalaya |
| 52 | MV Boli |
| 53 | Mangal |
| 54 | Microsoft Uighur |
| 55 | Sylfaen |

#### vUnitString

The **vUnitString** custom structure is a string that specifies the unit of measure for a numeric value.

It MUST be a value from the following table.

| Value | Unit of Measure |
| --- | --- |
| IN | Inches |
| FT | Feet |
| YD | Yards |
| MI | Miles |
| NM | Nautical miles |
| MM | Millimeters |
| CM | Centimeters |
| M | Meters |
| KM | Kilometers |
| P | Picas |
| PT | Points |
| C | Ciceros |
| D | Didots |
| RAD | Radians |
| DEG | Degrees |
| ˚ | Degrees, minutes, and seconds |
| ’ | Minutes |
| " | Seconds |
| DATE | Date and time |
| % | Percent |
| IN\_F | Fractional inches |
| MI\_F | Fractional miles |
| FEET/INCH | Feet and inches |
| PICAPOINTS | Picas and points |
| CICERO/DIDOT | Ciceros and didots |
| SQ IN | Square inches |
| SQ FT | Square feet |
| SQ MI | Square miles |
| ACRE | Acres |
| HA | Hectares |
| SQ MM | Square millimeters |
| SQ CM | Square centimeters |
| SQ M | Square meters |
| SQ KM | Square kilometers |
| EW | Elapsed weeks |
| ED | Elapsed days |
| EH | Elapsed hours |
| EM | Elapsed minutes |
| ES | Elapsed seconds |
| DE | Elapsed days |
| DFT | Points |
| DT | Points |
| DFA | Degrees |
| DA | Degrees |
| DFL | Inches |
| DL | Inches |
| DFP | The unit of [DrawingScale](#Section_b816dca6ba524f9fa65d6c737378e3e9) in [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) |
| DP | The unit of DrawingScale in drawing page |

# Structure Examples

This section provides examples describing some of the [parts](#Section_86c4746a7cad41e0a8ebee8fa420f4c7) in two simple [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9)s.

## Document with a Shape on a Page

This section describes some of the contents of the [Document XML Part](#Section_7ec3d7b00de24711a7b692daa2020d71), [Pages XML Part](#Section_947b485d676a480b96e6c0e4d1bf58f3), and [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a) for a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) consisting of one [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) with a rectangle with blue fill color and the text "Sample Text" on it:

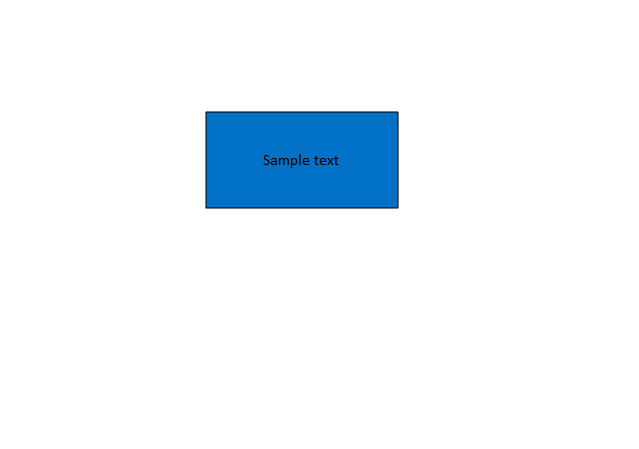


Figure 1: Drawing page sample

### Document XML Part

The following is an example of a Document XML part.

1. <?xml version="1.0"?>
2. <VisioDocument xmlns="http://schemas.microsoft.com/office/visio/2011/1/core" xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships" xml:space="preserve">
3. <FaceNames>
4. <FaceName NameU="Calibri"/>
5. </FaceNames>
6. <StyleSheets>
7. <StyleSheet ID="0" NameU="No Style" Name="No Style">
8. <Cell N="EnableLineProps" V="1"/>
9. <Cell N="EnableFillProps" V="1"/>
10. <Cell N="EnableTextProps" V="1"/>
11. <Cell N="LineWeight" V="0.01041666666666667"/>
12. <Cell N="LineColor" V="0"/>
13. <Cell N="LinePattern" V="1"/>
14. <Cell N="FillForegnd" V="1"/>
15. <Cell N="FillPattern" V="1"/>
16. <Cell N="VerticalAlign" V="1"/>
17. <Section N="Character">
18. <Row IX="0">
19. <Cell N="Font" V="Calibri"/>
20. <Cell N="Color" V="0"/>
21. <Cell N="FontScale" V="1"/>
22. <Cell N="Size" V="0.1666666666666667"/>
23. </Row>
24. </Section>
25. <Section N="Paragraph">
26. <Row IX="0">
27. <Cell N="IndFirst" V="0"/>
28. <Cell N="IndLeft" V="0"/>
29. <Cell N="IndRight" V="0"/>
30. <Cell N="SpLine" V="-1.2"/>
31. <Cell N="HorzAlign" V="1"/>
32. <Cell N="Bullet" V="0"/>
33. <Cell N="BulletStr" V=""/>
34. <Cell N="BulletFont" V="0"/>
35. <Cell N="BulletFontSize" V="-1"/>
36. <Cell N="TextPosAfterBullet" V="0"/>
37. <Cell N="Flags" V="0"/>
38. </Row>
39. </Section>
40. <Section N="Tabs">
41. <Row IX="0"/>
42. </Section>
43. </StyleSheet>
44. </StyleSheets>
45. <DocumentSheet NameU="TheDoc" Name="TheDoc" LineStyle="0" FillStyle="0" TextStyle="0">
46. <Cell N="DocLangID" V="en-US"/>
47. </DocumentSheet>
48. </VisioDocument>

The following table provides more information about element and attribute values found in the preceding sample **Document XML**.

| Element | Attributes | Notes |
| --- | --- | --- |
| [FaceName](#Section_56d67fa7f07c43389eef3343b2cb1c7f) | NameU="Calibri" | The name of the font is "Calibri". |
| [StyleSheet](#Section_9136adc9bd94425ea32d15fee80707ef) | ID="0"  NameU="No Style"  Name="No Style" | The ID attribute of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) is zero.  The language-dependent name of the style sheet is "No Style".  The language-independent name of the style sheet is "No Style". |
| [Cell](#Section_6f23bcc4af934023a3803e78a228e166) | N="[EnableLineProps](#Section_f98ec52b1c974c28a708f0521e2eab2e)"  V="1" | The [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9) of this style sheet will be [inherited](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) by [shapes](#Section_2995871af1b144e69754989fb760ee18) using this style sheet. |
| Cell | N="[EnableFillProps](#Section_66170b47b01e4a6ab1c698580f040a9f)"  V="1" | The [fill property](#Section_52745b68d28443b9a8f0564732579b99) of this style sheet will be inherited by shapes using this style sheet. |
| Cell | N="[EnableTextProps](#Section_21efe913d7264b89933c20e8662d90d5)"  V="1" | The [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) properties of this style sheet will be inherited by shapes using this style sheet. |
| Cell | N="[LineWeight](#Section_358e71950fb34e338b39b801d79d84a0)"  V="0.01041666666666667" | Unless overridden, the line thickness of shapes using this style sheet is 0.01041666666666667 inches (3/4 pt). |
| Cell | N="[LineColor](#Section_1ad2684e7fc94cb2857979c3107099f2)"  V="0" | Unless overridden, the color of the line of shapes using this style sheet is the color at index zero in the [color table](#Section_1fac45bfef104b29ada14acf47fed340) (black). |
| Cell | N="[LinePattern](#Section_f718c50060664fcc8b664bb5015f133f)"  V="1" | The line pattern is solid line. |
| Cell | N="[FillForegnd](#Section_50d71b31d16e42739b9da19e2dfa6e09)"  V="1" | Unless overridden, the color of the fill of shapes using this style sheet is the color at index one in the color table (white). |
| Cell | N="[FillPattern](#Section_1cd3d15cff2842118c41844affbe30ed)"  V="1" | Unless overridden, fills of shapes using this style sheet will have a solid fill color. |
| Cell | N="[VerticalAlign](#Section_732e98b321eb4d1182ef68287a55c1be)"  V="1" | Unless overridden, the text of shapes using this style sheet will have a center vertical alignment. |
| [Section](#Section_735b599d1359476785931c508a885779) | N="[Character](#Section_4be3913348a54f72976281f67f80da31)" | [Cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) under this tag relate to [character properties](#Section_c5dd283696ad47959dc458db5ab84015). |
| [Row](#Section_7ae7c325097c4225adf5e7b8b6695639) | IX="0" | This row describes character properties starting at index zero. |
| Cell | N="[Font](#Section_349e99f1ca234c7b98dd6f2285c3c9d5)"  V="Calibri" | Unless overridden, characters in text runs of shapes using this style sheet use the font named "Calibri". |
| Cell | N="[Color](#Section_b164d82af70e44c7a0d1d78fc034ccbc)"  V="0" | Unless overridden, characters in text runs of shapes using this style sheet have the color at index zero in the color table (black). |
| Cell | N="[FontScale](#Section_de9543b4227c40cfbf264dad9056122c)"  V="1" | Unless overridden, characters in text runs of shapes using this style sheet do not have altered font width. |
| Cell | N="[Size](#Section_d905a600d3c94f5181d83f51117ebbc4)"  V="0.1666666666666667" | Unless overridden, characters in text runs of shapes using this style sheet have a font size of 0.1666666666666667 inches (12 pt). |
| Section | N="[Paragraph](#Section_5a21eaa240b145729d02208da043da0a)" | Cells under this tag relate to [paragraph properties](#Section_949ea5ce9d7d4a16b51e9587ea795eab). |
| Row | IX="0" | These properties apply to the paragraph with index zero. |
| Cell | N="[IndFirst](#Section_001daa77c1f947f28e25889dce181358)"  V="0" | Unless overridden, paragraphs on shapes using this style sheet have no indentation on their first lines. |
| Cell | N="[IndLeft](#Section_9c08d34ba26142b6a5b720d92ec79bbb)"  V="0" | Unless overridden, paragraphs on shapes using this style sheet have no left indentation. |
| Cell | N="[IndRight](#Section_88e9057907e2411db824651009614919)"  V="0" | Unless overridden, paragraphs on shapes using this style sheet have no right indentation. |
| Cell | N="[SpLine](#Section_64ea293a99ed4411a6bcd15519472839)"  V="-1.2" | Unless overridden, each line in paragraphs on shapes using this style sheet has a height equal to 1.2 times the maximum font size of characters in the line. |
| Cell | N="[HorzAlign](#Section_1c184dde942b45ec93b708e0eeb1e3a7)"  V="1" | Unless overridden, paragraphs on shapes using this style sheet have a centered horizontal alignment. |
| Cell | N="[Bullet](#Section_d9b4e087744e48109f823cbcfcc8c5e7)"  V="0" | Unless overridden, paragraphs on shapes using this style sheet have no bullet. |
| Cell | N="[BulletStr](#Section_a64f1c829a4f45d7914f7bd65d8a0e5c)"  V="" | Unless overridden, paragraphs on shapes using this style sheet do not have a custom bullet string. |
| Cell | N="[BulletFont](#Section_dbade1efe63c40b1bc56d426897be651)"  V="0" | Unless overridden, paragraphs on shapes using this style sheet use the default bullet font. |
| Cell | N="[BulletFontSize](#Section_58c48d8409934755baa0e6c093d93f13)"  V="0" | Unless overridden, bullets for paragraphs on shapes using this style sheet have the same font size as the first character in the paragraph's text. |
| Cell | N="[TextPosAfterBullet](#Section_ed5f29afe86840ff80f7e0df8d2e1e3a)"  V="0" | Unless overridden, no distance will be added between any bullets for paragraphs on shapes using this style sheet and the text after it. |
| Cell | N="[Flags](#Section_4013b33847ac4b20a00f822bfa49108c)"  V="0" | Unless overridden, paragraphs on shapes using this style sheet have left to right text. |
| Section | N="[Tabs](#Section_1ebf938deeb2454486090feeb086cf2c)" | [Rows](#Section_d74a66b474714467b154ea4f60de7fdd) and cells under this tag define [tabs properties](#Section_7ae7864a00ec483d9391508c764ba856). |
| Row | IX="0" | Unless overridden, shapes using this style sheet have a single tab stop at the default position. |
| [DocumentSheet](#Section_d099c7366dfb4974ab266b95093ec9c9) | NameU="TheDoc"  Name="TheDoc"  LineStyle="0"  FillStyle="0"  TextStyle="0" | The language-dependent and language-independent names of the [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) are each "TheDoc".  Unless overridden, shapes in the web drawing inherit the line property, fill property, and text properties of the style sheet with an ID attribute of zero. |
| Cell | N="DocLangID" V="en-US" | Unless overridden, text in this web drawing is U.S. English. |

### Pages XML Part

The following is an example of a Pages XML part.

1. <?xml version="1.0"?>
2. <Pages xmlns="http://schemas.microsoft.com/office/visio/2011/1/core" xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships" xml:space="preserve">
3. <Page ID="0" NameU="Page-1" Name="Page-1">
4. <PageSheet LineStyle="0" FillStyle="0" TextStyle="0">
5. <Cell N="PageWidth" V="8.5"/>
6. <Cell N="PageHeight" V="11"/>
7. <Cell N="PageScale" V="1"/>
8. <Cell N="DrawingScale" V="1"/>
9. </PageSheet>
10. <Rel r:id="rId1"/>
11. </Page>
12. </Pages>

The following table provides more information about element and attribute values found in the preceding sample **Pages XML**.

| Element | Attributes | Notes |
| --- | --- | --- |
| [Page](#Section_27e583c30ef34d7c8face37bd18d9dc2) | ID="0"  NameU="Page-1"  Name="Page-1" | The ID attribute of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) is zero.  The language-dependent and language-independent names of the drawing page are both "Page-1". |
| [PageSheet](#Section_f81673b1da844754b19ea0475d889120) | LineStyle="0"  FillStyle="0"  TextStyle="0" | Unless overridden, [shapes](#Section_2995871af1b144e69754989fb760ee18) on this drawing page [inherit](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) the [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9), [fill property](#Section_52745b68d28443b9a8f0564732579b99), and [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) properties of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) with an ID attribute of zero. |
| [Cell](#Section_6f23bcc4af934023a3803e78a228e166) | N="[PageWidth](#Section_5b6e653473414683a59dcb921c62ff00)"  V="8.5" | The width of the drawing page is 8.5 inches. |
| Cell | N="[PageHeight](#Section_0ea0daedeee94ab6bd7cc941d0968f07)"  V="11" | The height of the drawing page is 11 inches. |
| Cell | N="[PageScale](#Section_d1bc58679407440fb419f94aaddb67b9)"  V="1" | The page scale of the drawing page is one inch. |
| Cell | N="[DrawingScale](#Section_b816dca6ba524f9fa65d6c737378e3e9)"  V="1" | The drawing scale of the drawing page is one inch. |

### Page XML Part

The following is an example of a Page XML part.

1. <?xml version="1.0"?>
2. <PageContents xmlns="http://schemas.microsoft.com/office/visio/2011/1/core" xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships" xml:space="preserve">
3. <Shapes>
4. <Shape ID="1" Type="Shape" LineStyle="0" FillStyle="0" TextStyle="0">
5. <Cell N="PinX" V="4"/>
6. <Cell N="PinY" V="5.5"/>
7. <Cell N="Width" V="2"/>
8. <Cell N="Height" V="1"/>
9. <Cell N="LocPinX" V="1"/>
10. <Cell N="LocPinY" V="0.5"/>
11. <Cell N="Angle" V="0"/>
12. <Cell N="FillForegnd" V="#0070c0"/>
13. <Section N="Geometry" IX="0">
14. <Row T="RelMoveTo" IX="1">
15. <Cell N="X" V="0"/>
16. <Cell N="Y" V="0"/>
17. </Row>
18. <Row T="RelLineTo" IX="2">
19. <Cell N="X" V="1"/>
20. <Cell N="Y" V="0"/>
21. </Row>
22. <Row T="RelLineTo" IX="3">
23. <Cell N="X" V="1"/>
24. <Cell N="Y" V="1"/>
25. </Row>
26. <Row T="RelLineTo" IX="4">
27. <Cell N="X" V="0"/>
28. <Cell N="Y" V="1"/>
29. </Row>
30. <Row T="RelLineTo" IX="5">
31. <Cell N="X" V="0"/>
32. <Cell N="Y" V="0"/>
33. </Row>
34. </Section>
35. <Text>Sample text</Text>
36. </Shape>
37. </Shapes>
38. </PageContents>

The following table provides more information about element and attribute values and element contents found in the preceding sample **Page XML**.

| Element | Attributes/contents | Notes |
| --- | --- | --- |
| [Shape](#Section_5d6be8d61cab4722ba32d73febc4e51d) | ID="1" Type="Shape" LineStyle="0"  FillStyle="0"  TextStyle="0" | The ID attribute of the shape is one.  The shape will be displayed and has no [subshapes](#Section_00285724289547c19f2f489ec5da125c) or foreign data.  The [shape](#Section_2995871af1b144e69754989fb760ee18) [inherits](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) the [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9), [fill property](#Section_52745b68d28443b9a8f0564732579b99), and [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) properties of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) with an ID attribute of zero. |
| [Cell](#Section_6f23bcc4af934023a3803e78a228e166) | N="[PinX](#Section_b68fb65a6d934afa86c394dcc6e13c5e)"  V="4" | The center of rotation of the shape is 4 inches right from the left edge of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). |
| Cell | N="[PinY](#Section_df919a5df7df43c3ab3d0be20347d5ad)"  V="5.5" | The center of rotation of the shape is 5.5 inches up from the bottom edge of the drawing page. |
| Cell | N="[Width](#Section_f8906dddccbe43e19655285cb1afff23)"  V="2" | The shape is two inches wide. |
| Cell | N="[Height](#Section_3a6641a8217f4a91bb7b0c37e95e1d7f)"  V="1" | The shape is one inch tall. |
| Cell | N="[LocPinX](#Section_418310fde01e4d63b948b0ff3eceeca3)"  V="1" | The center of rotation of the shape is one inch right from the left edge of the shape. |
| Cell | N="[LocPinY](#Section_fd5943ad21694b5d92e5d22bacc51a78)"  V="0.5" | The center of rotation of the shape is .5 inches up from the bottom edge of the shape. |
| Cell | N="[Angle](#Section_2f78fef45f9f42618dee649e30843985)"  V="0" | The shape has no rotation. |
| Cell | N="[FillForegnd](#Section_50d71b31d16e42739b9da19e2dfa6e09)"  V="#0070c0" | The color of the fill of the shape is equivalent to RGB(0, 112, 192). Note that this overrides the definition of this [cell](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) inherited from the style sheet. |
| [Section](#Section_735b599d1359476785931c508a885779) | N="[Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02)"  IX="0" | [Rows](#Section_d74a66b474714467b154ea4f60de7fdd) and cells under this element define geometry properties of the shape. This geometry section has an index of zero. |
| [Row](#Section_7ae7c325097c4225adf5e7b8b6695639) | T="[RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8)"  IX="1" | This row defines the starting point of the [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) in [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). This row has an index of one. |
| Cell | N="[X](#Section_d508318965a44cb1ada9a40e0b1e3b24)"  V="0" | The x-coordinate of the starting point of the geometry path is the same as that of the left edge of the shape. |
| Cell | N="[Y](#Section_99106ddc279843e794d0bb3a79cd86c7)"  V="0" | The y-coordinate of the starting point of the geometry path is the same as that of the bottom edge of the shape. |
| Row | T="[RelLineTo](#Section_ee800037097e410babc2ee1a3d9a9876)"  IX="2" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 2. |
| Cell | N="X"  V="1" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the right edge of the shape. |
| Cell | N="Y"  V="0" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the bottom edge of the shape. |
| Row | T="RelLineTo"  IX="3" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 3. |
| Cell | N="X"  V="1" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the right edge of the shape. |
| Cell | N="Y"  V="1" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the top edge of the shape. |
| Row | T="RelLineTo"  IX="4" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 4. |
| Cell | N="X"  V="0" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the left edge of the shape. |
| Cell | N="Y"  V="1" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the top edge of the shape. |
| Row | T="RelLineTo"  IX="5" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 5. |
| Cell | N="X"  V="0" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the left edge of the shape. |
| Cell | N="Y"  V="0" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the bottom edge of the shape. |
| [Text](#Section_3031da58e11e460b9df59cfb6bc0a836) | Sample text | The shape has text reading 'Sample text'. |

## Document with Master Inheritance

This section describes some of the contents of the [Masters XML Part](#Section_ac2cee21ca0e459b85e335908a476f70), Master XML Part, and [Page XML Part](#Section_1f15c8f06565465caefd2be6af545e8a) for a [web drawing](#Section_a4989515773d4f3db1e264bb7275b4c9) consisting of one [master](#Section_04e031963af24a52bd32ef5d79b9efc5) containing a rectangle with blue fill color and the text "Sample Text" on it, and one [shape](#Section_2995871af1b144e69754989fb760ee18) [inheriting](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) from that master via [master-to-shape inheritance](#Section_7442861798334d73aa7ff3a6f043a12d):

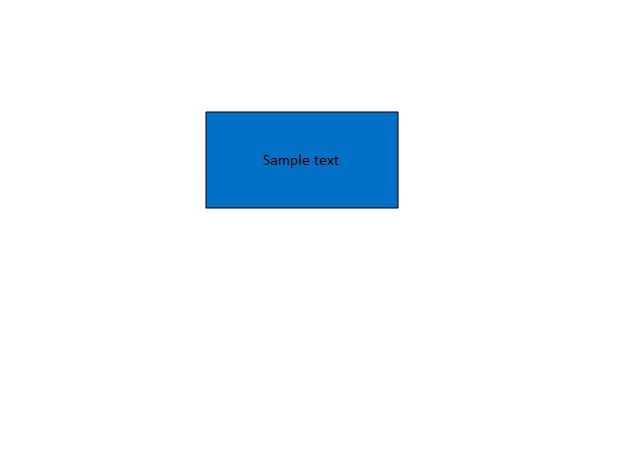


Figure 2: Drawing page sample

Note that the document displayed is identical to that in the [Document with a Shape on a Page](#Section_29ac4a0b6e9a4fa1984866655395bd92) example. Only the location of the data has changed.

### Masters XML Part

The following is an example of a Masters XML part.

1. <?xml version="1.0" encoding="utf-8"?>
2. <Masters xmlns="http://schemas.microsoft.com/office/visio/2011/1/core" xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships" xml:space="preserve">
3. <Master ID="2" UniqueID="{0020640D-0002-0000-8E40-00608CF305B2}" BaseID="{8FEBAF3E-100E-46A7-AFB4-6F1C4D75A7A7}" PatternFlags="0">
4. <PageSheet LineStyle="0" FillStyle="0" TextStyle="0">
5. <Cell N="PageWidth" V="2"/>
6. <Cell N="PageHeight" V="1"/>
7. <Cell N="PageScale" V="1"/>
8. <Cell N="DrawingScale" V="1"/>
9. </PageSheet>
10. <Rel r:id="rId1"/>
11. </Master>
12. </Masters>

The following table provides more information about element and attribute values and element contents found in the preceding sample **Masters XML**.

| Element | Attributes | Notes |
| --- | --- | --- |
| [Master](#Section_555d23f9a1aa401bb17680a9d0ed4109) | ID="2"  UniqueID="{0020640D-0002-0000-8E40-00608CF305B2}"  BaseID="{8FEBAF3E-100E-46A7-AFB4-6F1C4D75A7A7}"  PatternFlags="0" | The ID attribute of the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) is two.  The UniqueID of the master is the GUID {0020640D-0002-0000-8E40-00608CF305B2}.  The BaseID of the master is the GUID {8FEBAF3E-100E-46A7-AFB4-6F1C4D75A7A7}.  The master is not used as a custom pattern master. |
| [Cell](#Section_6f23bcc4af934023a3803e78a228e166) | N="[PageWidth](#Section_5b6e653473414683a59dcb921c62ff00)"  V="2" | The width of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) of the master is two inches. |
| Cell | N="[PageHeight](#Section_0ea0daedeee94ab6bd7cc941d0968f07)"  V="1" | The height of the drawing page of the master is one inch. |
| Cell | N="[PageScale](#Section_d1bc58679407440fb419f94aaddb67b9)"  V="1" | The page scale of the drawing page of the master is one inch. |
| Cell | N="[DrawingScale](#Section_b816dca6ba524f9fa65d6c737378e3e9)"  V="1" | The drawing scale of the drawing page of the master is one inch. |
| [Rel](#Section_34f54be6adb24aa8a6837d1db7a25d46) | r:id="rId1" | The [shapes](#Section_2995871af1b144e69754989fb760ee18) on this master are located in the [XML part](#Section_1e2c12b7de5249978c5f82c8143921b7) referenced by rId1 in the master.xml.rels XML part. |

### Master XML Part

The following is an example of a Master XML part.

1. <?xml version="1.0" encoding="utf-8"?>
2. <MasterContents xmlns="http://schemas.microsoft.com/office/visio/2011/1/core" xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships" xml:space="preserve">
3. <Shapes>
4. <Shape ID="5" Type="Shape" LineStyle="3" FillStyle="3" TextStyle="3">
5. <Cell N="PinX" V="1"/>
6. <Cell N="PinY" V="0.5"/>
7. <Cell N="Width" V="2"/>
8. <Cell N="Height" V="1"/>
9. <Cell N="LocPinX" V="1"/>
10. <Cell N="LocPinY" V="0.5"/>
11. <Cell N="Angle" V="0"/>
12. <Cell N="FillForegnd" V="#0070c0"/>
13. <Cell N="FillBkgnd" V="#000000"/>
14. <Section N="Geometry" IX="0">
15. <Cell N="NoFill" V="0"/>
16. <Cell N="NoLine" V="0"/>
17. <Cell N="NoShow" V="0"/>
18. <Row T="RelMoveTo" IX="1">
19. <Cell N="X" V="0"/>
20. <Cell N="Y" V="0"/>
21. </Row>
22. <Row T="RelLineTo" IX="2">
23. <Cell N="X" V="1"/>
24. <Cell N="Y" V="0"/>
25. </Row>
26. <Row T="RelLineTo" IX="3">
27. <Cell N="X" V="1"/>
28. <Cell N="Y" V="1"/>
29. </Row>
30. <Row T="RelLineTo" IX="4">
31. <Cell N="X" V="0"/>
32. <Cell N="Y" V="1"/>
33. </Row>
34. <Row T="RelLineTo" IX="5">
35. <Cell N="X" V="0"/>
36. <Cell N="Y" V="0"/>
37. </Row>
38. </Section>
39. <Text>Sample text</Text>
40. </Shape>
41. </Shapes>
42. </MasterContents>

The following table provides more information about element and attribute values and element contents found in the preceding sample **Master XML**.

| Element | Attributes/contents | Notes |
| --- | --- | --- |
| [Shape](#Section_5d6be8d61cab4722ba32d73febc4e51d) | ID="1" Type="Shape" LineStyle="3" FillStyle="3" TextStyle="3"> | The ID attribute of the shape on the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) is one.  The [shape](#Section_2995871af1b144e69754989fb760ee18) [inherits](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) the [line property](#Section_999c6bb7a4f94aadb299d18418fa0ec9), [fill property](#Section_52745b68d28443b9a8f0564732579b99), and [text](#Section_9aec7e652abe4518aaa7650e2fd6ceff) properties of the [style sheet](#Section_b01703e4a485477d9128e93a52880888) with an ID attribute of three. |
| [Cell](#Section_6f23bcc4af934023a3803e78a228e166) | N="[PinX](#Section_b68fb65a6d934afa86c394dcc6e13c5e)"  V="1" | The center of rotation of the shape on the master is one inch right from the left edge of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b) of the master. |
| Cell | N="[PinY](#Section_df919a5df7df43c3ab3d0be20347d5ad)"  V="0.5" | The center of rotation of the shape on the master is 0.5 inches up from the bottom edge of the drawing page of the master. |
| Cell | N="[Width](#Section_f8906dddccbe43e19655285cb1afff23)"  V="2" | The shape on the master is two inches wide. |
| Cell | N="[Height](#Section_3a6641a8217f4a91bb7b0c37e95e1d7f)"  V="1" | The shape on the master is one inch tall. |
| Cell | N="[LocPinX](#Section_418310fde01e4d63b948b0ff3eceeca3)"  V="1" | The center of rotation of the shape on the master is one inch right from the left edge of the shape. |
| Cell | N="[LocPinY](#Section_fd5943ad21694b5d92e5d22bacc51a78)"  V="0.5" | The center of rotation of the shape on the master is .5 inches up from the bottom edge of the shape. |
| Cell | N="[Angle](#Section_2f78fef45f9f42618dee649e30843985)"  V="0" | The shape on the master has no rotation. |
| Cell | N="[FillForegnd](#Section_50d71b31d16e42739b9da19e2dfa6e09)"  V="#0070c0" | The color of the fill of the shape on the master is equivalent to RGB(0, 112, 192). |
| [Section](#Section_735b599d1359476785931c508a885779) | N="[Geometry](#Section_c6f4364f5fb749f3993e49d4d709aa02)"  IX="0" | [Rows](#Section_d74a66b474714467b154ea4f60de7fdd) and [cells](#Section_c9b39e00f1d7417eb68ccdea8ffe091a) under this element define geometry properties of the shape on the master. This geometry section has an index of zero. |
| [Row](#Section_7ae7c325097c4225adf5e7b8b6695639) | T="[RelMoveTo](#Section_b358786ec22b4eb19446611d362210c8)"  IX="1" | This row defines the starting point of the [geometry path](#Section_1b69f6b831d44b28bc3770ee4956d8cb) in [relative coordinates](#Section_6179f5b2a7ea40b9b63617a5d6c70bab). This row has an index of one. |
| Cell | N="[X](#Section_d508318965a44cb1ada9a40e0b1e3b24)"  V="0" | The x-coordinate of the starting point of the geometry path is the same as that of the left edge of the shape. |
| Cell | N="[Y](#Section_99106ddc279843e794d0bb3a79cd86c7)"  V="0" | The y-coordinate of the starting point of the geometry path is the same as that of the bottom edge of the shape. |
| Row | T="[RelLineTo](#Section_ee800037097e410babc2ee1a3d9a9876)"  IX="2" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 2. |
| Cell | N="X"  V="1" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the right edge of the shape. |
| Cell | N="Y"  V="0" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the bottom edge of the shape. |
| Row | T="RelLineTo"  IX="3" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 3. |
| Cell | N="X"  V="1" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the right edge of the shape. |
| Cell | N="Y"  V="1" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the top edge of the shape. |
| Row | T="RelLineTo"  IX="4" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 4. |
| Cell | N="X"  V="0" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the left edge of the shape. |
| Cell | N="Y"  V="1" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the top edge of the shape. |
| Row | T="RelLineTo"  IX="5" | This row defines a line segment in the geometry path from the point defined in the previous row to the point defined in this row's cells in relative coordinates. This row has an index of 5. |
| Cell | N="X"  V="0" | The x-coordinate of the endpoint of the line segment defined by this row is the same as that of the left edge of the shape. |
| Cell | N="Y"  V="0" | The y-coordinate of the endpoint of the line segment defined by this row is the same as that of the bottom edge of the shape. |
| [Text](#Section_3031da58e11e460b9df59cfb6bc0a836) | Sample text | The shape on the master has text reading 'Sample text'. |

### Page XML Part

The following is an example of a Page XML part.

1. <?xml version="1.0" encoding="utf-8"?>
2. <PageContents xmlns="http://schemas.microsoft.com/office/visio/2011/1/core" xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships" xml:space="preserve">
3. <Shapes>
4. <Shape ID="1" Type="Shape" Master="2">
5. <Cell N="PinX" V="4"/>
6. <Cell N="PinY" V="5.5"/>
7. </Shape>
8. </Shapes>
9. </PageContents>

The following table provides more information about element and attribute values found in the preceding sample **Page XML**.

| Element | Attributes | Notes |
| --- | --- | --- |
| [Shape](#Section_5d6be8d61cab4722ba32d73febc4e51d) | ID="1"  Type="Shape"  Master="2" | The ID attribute of the [shape](#Section_2995871af1b144e69754989fb760ee18) is one.  The shape will be displayed and has no [subshapes](#Section_00285724289547c19f2f489ec5da125c) or foreign data.  The shape [inherits](#Section_5865d55af28e4dc7b02d79e35e8cd7eb) the values of the [master](#Section_04e031963af24a52bd32ef5d79b9efc5) with an ID attribute of two via [master-to-shape inheritance](#Section_7442861798334d73aa7ff3a6f043a12d). |
| [Cell](#Section_6f23bcc4af934023a3803e78a228e166) | N="[PinX](#Section_b68fb65a6d934afa86c394dcc6e13c5e)"  V="4" | The center of rotation of the shape is 4 inches right from the left edge of the [drawing page](#Section_bb1af8e686064cd981b54cf0e8dedf1b). Note that this overrides the PinX value in the [Master XML Part](#Section_58039b3dac8545959c63d2c81c2d212f). |
| Cell | N="[PinY](#Section_df919a5df7df43c3ab3d0be20347d5ad)"  V="5.5" | The center of rotation of the shape is 5.5 inches up from the bottom edge of the drawing page. Note that this overrides the PinY value in the Master XML Part. |

# Security

## Security Considerations for Implementers

None.

## Index of Security Fields

None.

# Appendix A: Full XML Schema

For ease of implementation, the following is the full XML schema for this protocol.

1. <!--
2. XML for Visio Schema
3. http://schemas.microsoft.com/office/visio/2011/1/core
4. Copyright (C) 2000-2002 Microsoft Corporation. All rights reserved.
5. -->
6. <xsd:schema xmlns:xsd="http://www.w3.org/2001/XMLSchema"
7. targetNamespace="http://schemas.microsoft.com/office/visio/2011/1/core"
8. xmlns="http://schemas.microsoft.com/office/visio/2011/1/core"
9. xmlns:r="http://schemas.openxmlformats.org/officeDocument/2006/relationships"
10. elementFormDefault="qualified" attributeFormDefault="unqualified">
11. <xsd:import namespace="http://schemas.openxmlformats.org/officeDocument/2006/relationships"
12. schemaLocation="oRel.xsd"/>
13. <xsd:annotation>
14. <xsd:documentation>
15. Permission to copy, display and distribute the contents of this document (the
16. "Specification"), in any medium for any purpose without fee or royalty is
17. hereby granted, provided that you include the following notice on ALL copies of
18. the Specification, or portions thereof, that you make:
19. Copyright (c) Microsoft Corporation. All rights reserved. Permission to copy,
20. display and distribute this document is available at:
21. http://msdn.microsoft.com/library/en-us/odcXMLRef/html/odcXMLRefLegalNotice.asp?frame=true.
22. No right to create modifications or derivatives of this Specification is
23. granted herein. There is a separate patent license available to parties
24. interested in implementing software programs that can read and write files that
25. conform to the Specification. This patent license is available at this
26. location: http://www.microsoft.com/mscorp/ip/format/xmlpatentlicense.asp.
27. THE SPECIFICATION IS PROVIDED "AS IS" AND MICROSOFT MAKES NO REPRESENTATIONS OR
28. WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, WARRANTIES OF
29. MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, OR TITLE;
30. THAT THE CONTENTS OF THE SPECIFICATION ARE SUITABLE FOR ANY PURPOSE; NOR THAT
31. THE IMPLEMENTATION OF SUCH CONTENTS WILL NOT INFRINGE ANY THIRD PARTY PATENTS,
32. COPYRIGHTS, TRADEMARKS OR OTHER RIGHTS. MICROSOFT WILL NOT BE LIABLE FOR ANY
33. DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF
34. OR RELATING TO ANY USE OR DISTRIBUTION OF THE SPECIFICATION.
35. The name and trademarks of Microsoft may NOT be used in any manner, including
36. advertising or publicity pertaining to the Specification or its contents
37. without specific, written prior permission. Title to copyright in the
38. Specification will at all times remain with Microsoft. No other rights are
39. granted by implication, estoppel or otherwise.
40. </xsd:documentation>
41. </xsd:annotation>
43. <!--
44. Root-level elements for different parts
45. -->
46. <!--document.xml-->
47. <xsd:element name="VisioDocument" type="VisioDocument\_Type" />
48. <!--masters/masters.xml-->
49. <xsd:element name="Masters" type="Masters\_Type" />
50. <!--masters/master#.xml-->
51. <xsd:element name="MasterContents" type="PageContents\_Type" />
52. <!--pages/pages.xml-->
53. <xsd:element name="Pages" type="Pages\_Type" />
54. <!--pages/page#.xml-->
55. <xsd:element name="PageContents" type="PageContents\_Type" />
56. <!--data/connections.xml-->
57. <xsd:element name="DataConnections" type="DataConnections\_Type" />
58. <!--data/recordsets.xml-->
59. <xsd:element name="DataRecordSets" type="DataRecordSets\_Type" />
60. <!--comments.xml-->
61. <xsd:element name="Comments" type="Comments\_Type" />
62. <!--extensions.xml-->
63. <xsd:element name="Extensions" type="Extensions\_Type" />
64. <!--
65. Complex types
66. -->
67. <xsd:complexType name="VisioDocument\_Type">
68. <xsd:sequence>
69. <xsd:element name="DocumentSettings" type="DocumentSettings\_Type" minOccurs="0"
70. maxOccurs="1" />
71. <xsd:element name="Colors" type="Colors\_Type" minOccurs="0" maxOccurs="1" />
72. <xsd:element name="FaceNames" type="FaceNames\_Type" minOccurs="0"
73. maxOccurs="1" />
74. <xsd:element name="StyleSheets" type="StyleSheets\_Type" minOccurs="0"
75. maxOccurs="1" />
76. <xsd:element name="DocumentSheet" type="DocumentSheet\_Type" minOccurs="0"
77. maxOccurs="1" />
78. <xsd:element name="EventList" type="EventList\_Type" minOccurs="0"
79. maxOccurs="1" />
80. <xsd:element name="HeaderFooter" type="HeaderFooter\_Type" minOccurs="0"
81. maxOccurs="1" />
82. <xsd:element name="PublishSettings" type="PublishSettings\_Type" minOccurs="0"
83. maxOccurs="1" />
84. <xsd:any minOccurs="0" maxOccurs="unbounded" namespace="##other"
85. processContents="lax" />
86. </xsd:sequence>
87. <xsd:anyAttribute namespace="##other" processContents="lax" />
88. </xsd:complexType>
89. <!--Sheet abstract base class-->
90. <xsd:complexType name="Sheet\_Type" abstract="true">
91. <xsd:sequence minOccurs="0" maxOccurs="unbounded">
92. <xsd:element name="Cell" type="Cell\_Type" minOccurs="0"
93. maxOccurs="unbounded" />
94. <xsd:element name="Trigger" type="Trigger\_Type" minOccurs="0"
95. maxOccurs="unbounded" />
96. <xsd:element name="Section" type="Section\_Type" minOccurs="0"
97. maxOccurs="unbounded" />
98. <!--Sheets can hold and roundtrip arbitrary, unknown sub-XML-->
99. <xsd:any minOccurs="0" maxOccurs="unbounded" namespace="##other"
100. processContents="lax" />
101. </xsd:sequence>
103. <!--Style sheet IDs for inheritance-->
104. <xsd:attribute name="LineStyle" type="xsd:unsignedInt" />
105. <xsd:attribute name="FillStyle" type="xsd:unsignedInt" />
106. <xsd:attribute name="TextStyle" type="xsd:unsignedInt" />
107. <!--Sheets can hold and roundtrip arbitrary, unknown attributes-->
108. <xsd:anyAttribute namespace="##other" processContents="lax" />
109. </xsd:complexType>
110. <!--Section base types-->
111. <xsd:complexType name="Section\_Type">
112. <xsd:sequence>
113. <!--Cells only show up directly under the Geometry section-->
114. <xsd:element name="Cell" type="Cell\_Type" minOccurs="0"
115. maxOccurs="unbounded" />
116. <xsd:element name="Trigger" type="Trigger\_Type" minOccurs="0"
117. maxOccurs="unbounded" />
118. <!--All Sections have child rows-->
119. <xsd:element name="Row" type="Row\_Type" minOccurs="0" maxOccurs="unbounded" />
120. </xsd:sequence>
122. <xsd:attribute name="N" type="xsd:string" use="required" />
123. <xsd:attribute name="Del" type="xsd:boolean" />
125. <!--Only Geometry sections have indexes as there can be several in a Sheet-->
126. <xsd:attribute name="IX" type="xsd:unsignedInt" />
127. </xsd:complexType>
128. <!--Row base types-->
129. <xsd:complexType name="Row\_Type">
130. <xsd:sequence>
131. <xsd:element name="Cell" type="Cell\_Type" minOccurs="0"
132. maxOccurs="unbounded" />
133. <xsd:element name="Trigger" type="Trigger\_Type" minOccurs="0"
134. maxOccurs="unbounded" />
135. </xsd:sequence>
137. <!--The name attributes are only used on named rows-->
138. <xsd:attribute name="N" type="xsd:string" />
139. <xsd:attribute name="LocalName" type="xsd:string" />
141. <!--The index attribute is only used on indexed rows-->
142. <xsd:attribute name="IX" type="xsd:unsignedInt" />
144. <!--The type attribute is only used on Rows in the Geometry section-->
145. <xsd:attribute name="T" type="xsd:string" />
147. <!--Any row can be locally deleted-->
148. <xsd:attribute name="Del" type="xsd:boolean" />
149. </xsd:complexType>
150. <!--Cell base type-->
151. <xsd:complexType name="Cell\_Type" mixed="true">
152. <xsd:sequence>
153. <xsd:element name="RefBy" type="RefBy\_Type" minOccurs="0"
154. maxOccurs="unbounded" />
155. </xsd:sequence>
156. <xsd:attribute name="N" type="xsd:string" use="required" />
157. <xsd:attribute name="U" type="xsd:string" />
158. <xsd:attribute name="E" type="xsd:string" />
159. <xsd:attribute name="F" type="xsd:string" />
160. <xsd:attribute name="V" type="xsd:string" />
161. </xsd:complexType>
162. <!--Trigger base type-->
163. <xsd:complexType name="Trigger\_Type" mixed="true">
164. <xsd:sequence>
165. <xsd:element name="RefBy" type="RefBy\_Type" minOccurs="0"
166. maxOccurs="unbounded" />
167. </xsd:sequence>
168. <xsd:attribute name="N" type="xsd:string" use="required" />
169. </xsd:complexType>
170. <xsd:complexType name="DocumentSheet\_Type">
171. <xsd:complexContent>
172. <xsd:extension base="Sheet\_Type">
173. <xsd:attribute name="Name" type="xsd:string" />
174. <xsd:attribute name="NameU" type="xsd:string" />
175. <xsd:attribute name="IsCustomName" type="xsd:boolean" />
176. <xsd:attribute name="IsCustomNameU" type="xsd:boolean" />
177. <xsd:attribute name="UniqueID" type="xsd:string" />
178. </xsd:extension>
179. </xsd:complexContent>
180. </xsd:complexType>
182. <xsd:complexType name="StyleSheet\_Type">
183. <xsd:complexContent>
184. <xsd:extension base="Sheet\_Type">
185. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
186. <xsd:attribute name="Name" type="xsd:string" />
187. <xsd:attribute name="NameU" type="xsd:string" />
188. <xsd:attribute name="IsCustomName" type="xsd:boolean" />
189. <xsd:attribute name="IsCustomNameU" type="xsd:boolean" />
190. </xsd:extension>
191. </xsd:complexContent>
192. </xsd:complexType>
194. <xsd:complexType name="PageSheet\_Type">
195. <xsd:complexContent>
196. <xsd:extension base="Sheet\_Type">
197. <xsd:attribute name="UniqueID" type="xsd:string" />
198. </xsd:extension>
199. </xsd:complexContent>
200. </xsd:complexType>
202. <xsd:complexType name="ShapeSheet\_Type">
203. <xsd:complexContent>
204. <xsd:extension base="Sheet\_Type">
205. <xsd:sequence>
206. <!--Shape Text-->
207. <xsd:element name="Text" type="Text\_Type" minOccurs="0" maxOccurs="1" />
209. <!--Legacy data fields-->
210. <xsd:element name="Data1" type="Data\_Type" minOccurs="0" maxOccurs="1" />
211. <xsd:element name="Data2" type="Data\_Type" minOccurs="0" maxOccurs="1" />
212. <xsd:element name="Data3" type="Data\_Type" minOccurs="0" maxOccurs="1" />
214. <!--Foreign object data for images, OLE, ActiveX, etc.-->
215. <xsd:element name="ForeignData" type="ForeignData\_Type" minOccurs="0"
216. maxOccurs="1" />
218. <!--Sub-shapes if this is a group-->
219. <xsd:element name="Shapes" type="Shapes\_Type" minOccurs="0"
220. maxOccurs="1" />
221. </xsd:sequence>
223. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
224. <xsd:attribute name="OriginalID" type="xsd:unsignedInt" />
225. <xsd:attribute name="Del" type="xsd:boolean" />
226. <xsd:attribute name="MasterShape" type="xsd:unsignedInt" />
227. <xsd:attribute name="UniqueID" type="xsd:string" />
228. <xsd:attribute name="Name" type="xsd:string" />
229. <xsd:attribute name="NameU" type="xsd:string" />
230. <xsd:attribute name="IsCustomName" type="xsd:boolean" />
231. <xsd:attribute name="IsCustomNameU" type="xsd:boolean" />
232. <xsd:attribute name="Master" type="xsd:unsignedInt" />
233. <xsd:attribute name="Type" type="xsd:token" />
234. </xsd:extension>
235. </xsd:complexContent>
236. </xsd:complexType>
237. <xsd:complexType name="Text\_Type" mixed="true">
238. <xsd:choice minOccurs="0" maxOccurs="unbounded">
239. <xsd:element name="cp" type="cp\_Type" minOccurs="0" maxOccurs="unbounded" />
240. <xsd:element name="pp" type="pp\_Type" minOccurs="0" maxOccurs="unbounded" />
241. <xsd:element name="tp" type="tp\_Type" minOccurs="0" maxOccurs="unbounded" />
242. <xsd:element name="fld" type="fld\_Type" minOccurs="0" maxOccurs="unbounded" />
243. </xsd:choice>
244. </xsd:complexType>
245. <!--Text fields-->
246. <xsd:complexType name="cp\_Type">
247. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required" />
248. </xsd:complexType>
249. <xsd:complexType name="pp\_Type">
250. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required" />
251. </xsd:complexType>
252. <xsd:complexType name="tp\_Type">
253. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required" />
254. </xsd:complexType>
255. <xsd:complexType name="fld\_Type">
256. <xsd:simpleContent>
257. <xsd:extension base="xsd:string">
258. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required" />
259. </xsd:extension>
260. </xsd:simpleContent>
261. </xsd:complexType>
262. <xsd:complexType name="Data\_Type">
263. <xsd:simpleContent>
264. <xsd:extension base="xsd:string" />
265. </xsd:simpleContent>
266. </xsd:complexType>
267. <xsd:complexType name="ForeignData\_Type" mixed="true">
268. <xsd:sequence>
269. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1" />
270. </xsd:sequence>
271. <xsd:attribute name="ForeignType" type="xsd:token" use="required" />
272. <xsd:attribute name="ObjectType" type="xsd:unsignedInt" />
273. <xsd:attribute name="ShowAsIcon" type="xsd:boolean" />
274. <xsd:attribute name="ObjectWidth" type="xsd:double" />
275. <xsd:attribute name="ObjectHeight" type="xsd:double" />
276. <xsd:attribute name="MappingMode" type="xsd:unsignedShort" />
277. <xsd:attribute name="ExtentX" type="xsd:double" />
278. <xsd:attribute name="ExtentY" type="xsd:double" />
279. <xsd:attribute name="CompressionType" type="xsd:token" />
280. <xsd:attribute name="CompressionLevel" type="xsd:double" />
281. </xsd:complexType>
283. <xsd:complexType name="DocumentSettings\_Type">
284. <xsd:all>
285. <xsd:element name="GlueSettings" type="GlueSettings\_Type" minOccurs="0"
286. maxOccurs="1" />
287. <xsd:element name="SnapSettings" type="SnapSettings\_Type" minOccurs="0"
288. maxOccurs="1" />
289. <xsd:element name="SnapExtensions" type="SnapExtensions\_Type" minOccurs="0"
290. maxOccurs="1" />
291. <xsd:element name="SnapAngles" type="SnapAngles\_Type" minOccurs="0"
292. maxOccurs="1" />
293. <xsd:element name="DynamicGridEnabled" type="DynamicGridEnabled\_Type"
294. minOccurs="0" maxOccurs="1" />
295. <xsd:element name="ProtectStyles" type="ProtectStyles\_Type" minOccurs="0"
296. maxOccurs="1" />
297. <xsd:element name="ProtectShapes" type="ProtectShapes\_Type" minOccurs="0"
298. maxOccurs="1" />
299. <xsd:element name="ProtectMasters" type="ProtectMasters\_Type" minOccurs="0"
300. maxOccurs="1" />
301. <xsd:element name="ProtectBkgnds" type="ProtectBkgnds\_Type" minOccurs="0"
302. maxOccurs="1" />
303. <xsd:element name="CustomMenusFile" type="CustomMenusFile\_Type" minOccurs="0"
304. maxOccurs="1" />
305. <xsd:element name="CustomToolbarsFile" type="CustomToolbarsFile\_Type"
306. minOccurs="0" maxOccurs="1" />
307. <xsd:element name="AttachedToolbars" type="AttachedToolbars\_Type" minOccurs="0"
308. maxOccurs="1" />
309. </xsd:all>
310. <xsd:attribute name="TopPage" type="xsd:unsignedInt" />
311. <xsd:attribute name="DefaultTextStyle" type="xsd:unsignedInt" />
312. <xsd:attribute name="DefaultLineStyle" type="xsd:unsignedInt" />
313. <xsd:attribute name="DefaultFillStyle" type="xsd:unsignedInt" />
314. <xsd:attribute name="DefaultGuideStyle" type="xsd:unsignedInt" />
315. </xsd:complexType>
316. <xsd:complexType name="GlueSettings\_Type">
317. <xsd:simpleContent>
318. <xsd:extension base="xsd:int" />
319. </xsd:simpleContent>
320. </xsd:complexType>
321. <xsd:complexType name="SnapSettings\_Type">
322. <xsd:simpleContent>
323. <xsd:extension base="xsd:int" />
324. </xsd:simpleContent>
325. </xsd:complexType>
326. <xsd:complexType name="SnapExtensions\_Type">
327. <xsd:simpleContent>
328. <xsd:extension base="xsd:int" />
329. </xsd:simpleContent>
330. </xsd:complexType>
331. <xsd:complexType name="SnapAngles\_Type">
332. <xsd:sequence>
333. <xsd:element name="SnapAngle" type="SnapAngle\_Type" minOccurs="0"
334. maxOccurs="unbounded" />
335. </xsd:sequence>
336. </xsd:complexType>
337. <xsd:complexType name="SnapAngle\_Type">
338. <xsd:simpleContent>
339. <xsd:extension base="xsd:double" />
340. </xsd:simpleContent>
341. </xsd:complexType>
342. <xsd:complexType name="DynamicGridEnabled\_Type">
343. <xsd:simpleContent>
344. <xsd:extension base="xsd:boolean" />
345. </xsd:simpleContent>
346. </xsd:complexType>
347. <xsd:complexType name="ProtectStyles\_Type">
348. <xsd:simpleContent>
349. <xsd:extension base="xsd:boolean" />
350. </xsd:simpleContent>
351. </xsd:complexType>
352. <xsd:complexType name="ProtectShapes\_Type">
353. <xsd:simpleContent>
354. <xsd:extension base="xsd:boolean" />
355. </xsd:simpleContent>
356. </xsd:complexType>
357. <xsd:complexType name="ProtectMasters\_Type">
358. <xsd:simpleContent>
359. <xsd:extension base="xsd:boolean" />
360. </xsd:simpleContent>
361. </xsd:complexType>
362. <xsd:complexType name="ProtectBkgnds\_Type">
363. <xsd:simpleContent>
364. <xsd:extension base="xsd:boolean" />
365. </xsd:simpleContent>
366. </xsd:complexType>
367. <xsd:complexType name="CustomMenusFile\_Type">
368. <xsd:simpleContent>
369. <xsd:extension base="xsd:string" />
370. </xsd:simpleContent>
371. </xsd:complexType>
372. <xsd:complexType name="CustomToolbarsFile\_Type">
373. <xsd:simpleContent>
374. <xsd:extension base="xsd:string" />
375. </xsd:simpleContent>
376. </xsd:complexType>
377. <xsd:complexType name="AttachedToolbars\_Type">
378. <xsd:simpleContent>
379. <xsd:extension base="xsd:base64Binary" />
380. </xsd:simpleContent>
381. </xsd:complexType>
382. <xsd:complexType name="Colors\_Type">
383. <xsd:sequence>
384. <xsd:element name="ColorEntry" type="ColorEntry\_Type" minOccurs="1"
385. maxOccurs="unbounded" />
386. </xsd:sequence>
387. </xsd:complexType>
388. <xsd:complexType name="ColorEntry\_Type">
389. <xsd:attribute name="IX" type="xsd:unsignedInt" use="required" />
390. <xsd:attribute name="RGB" type="xsd:string" use="required" />
391. </xsd:complexType>
392. <xsd:complexType name="FaceNames\_Type">
393. <xsd:sequence>
394. <xsd:element name="FaceName" type="FaceName\_Type" minOccurs="1"
395. maxOccurs="unbounded" />
396. </xsd:sequence>
397. </xsd:complexType>
398. <xsd:complexType name="FaceName\_Type">
399. <xsd:attribute name="NameU" type="xsd:string" use="required" />
400. <xsd:attribute name="UnicodeRanges" type="xsd:string" />
401. <xsd:attribute name="CharSets" type="xsd:string" />
402. <xsd:attribute name="Panos" type="xsd:string" />
403. <xsd:attribute name="Panose" type="xsd:string" />
404. <xsd:attribute name="Flags" type="xsd:unsignedInt" />
405. </xsd:complexType>
406. <xsd:complexType name="StyleSheets\_Type">
407. <xsd:sequence>
408. <xsd:element name="StyleSheet" type="StyleSheet\_Type" minOccurs="0"
409. maxOccurs="unbounded" />
410. </xsd:sequence>
411. </xsd:complexType>
412. <xsd:complexType name="Masters\_Type">
413. <xsd:sequence>
414. <xsd:element name="Master" type="Master\_Type" minOccurs="0"
415. maxOccurs="unbounded" />
416. <xsd:element name="MasterShortcut" type="MasterShortcut\_Type" minOccurs="0"
417. maxOccurs="unbounded" />
418. </xsd:sequence>
419. </xsd:complexType>
420. <xsd:complexType name="Master\_Type">
421. <xsd:all>
422. <xsd:element name="PageSheet" type="PageSheet\_Type" minOccurs="0"
423. maxOccurs="1" />
424. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1" />
425. <xsd:element name="Icon" type="Icon\_Type" minOccurs="0" maxOccurs="1" />
426. </xsd:all>
427. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
428. <xsd:attribute name="BaseID" type="xsd:string" />
429. <xsd:attribute name="UniqueID" type="xsd:string" />
430. <xsd:attribute name="MatchByName" type="xsd:boolean" />
431. <xsd:attribute name="Name" type="xsd:string" />
432. <xsd:attribute name="NameU" type="xsd:string" />
433. <xsd:attribute name="IsCustomName" type="xsd:boolean" />
434. <xsd:attribute name="IsCustomNameU" type="xsd:boolean" />
435. <xsd:attribute name="IconSize" type="xsd:unsignedShort" />
436. <xsd:attribute name="PatternFlags" type="xsd:unsignedShort" />
437. <xsd:attribute name="Prompt" type="xsd:string" />
438. <xsd:attribute name="Hidden" type="xsd:boolean" />
439. <xsd:attribute name="IconUpdate" type="xsd:boolean" />
440. <xsd:attribute name="AlignName" type="xsd:unsignedShort" />
441. <xsd:attribute name="MasterType" type="xsd:unsignedShort" />
442. </xsd:complexType>
443. <xsd:complexType name="Icon\_Type">
444. <xsd:simpleContent>
445. <xsd:extension base="xsd:base64Binary" />
446. </xsd:simpleContent>
447. </xsd:complexType>
448. <xsd:complexType name="MasterShortcut\_Type">
449. <xsd:all>
450. <xsd:element name="Icon" type="Icon\_Type" minOccurs="0" maxOccurs="1" />
451. </xsd:all>
452. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
453. <xsd:attribute name="Name" type="xsd:string" />
454. <xsd:attribute name="NameU" type="xsd:string" />
455. <xsd:attribute name="IsCustomName" type="xsd:boolean" />
456. <xsd:attribute name="IsCustomNameU" type="xsd:boolean" />
457. <xsd:attribute name="IconSize" type="xsd:unsignedShort" />
458. <xsd:attribute name="PatternFlags" type="xsd:unsignedShort" />
459. <xsd:attribute name="Prompt" type="xsd:string" />
460. <xsd:attribute name="ShortcutURL" type="xsd:string" />
461. <xsd:attribute name="ShortcutHelp" type="xsd:string" />
462. <xsd:attribute name="AlignName" type="xsd:unsignedShort" />
463. <xsd:attribute name="MasterType" type="xsd:unsignedShort" />
464. </xsd:complexType>
465. <xsd:complexType name="PageContents\_Type">
466. <xsd:sequence>
467. <xsd:element name="Shapes" type="Shapes\_Type" minOccurs="0" maxOccurs="1" />
468. <xsd:element name="Connects" type="Connects\_Type" minOccurs="0"
469. maxOccurs="1" />
470. </xsd:sequence>
471. </xsd:complexType>
472. <xsd:complexType name="Shapes\_Type">
473. <xsd:sequence>
474. <xsd:element name="Shape" type="ShapeSheet\_Type" minOccurs="0"
475. maxOccurs="unbounded" />
476. </xsd:sequence>
477. </xsd:complexType>
478. <xsd:complexType name="Connects\_Type">
479. <xsd:sequence>
480. <xsd:element name="Connect" type="Connect\_Type" minOccurs="0"
481. maxOccurs="unbounded" />
482. </xsd:sequence>
483. </xsd:complexType>
484. <xsd:complexType name="Connect\_Type">
485. <xsd:attribute name="FromSheet" type="xsd:unsignedInt" use="required" />
486. <xsd:attribute name="FromCell" type="xsd:string" />
487. <xsd:attribute name="FromPart" type="xsd:int" />
488. <xsd:attribute name="ToSheet" type="xsd:unsignedInt" use="required" />
489. <xsd:attribute name="ToCell" type="xsd:string" />
490. <xsd:attribute name="ToPart" type="xsd:int" />
491. </xsd:complexType>
492. <xsd:complexType name="Pages\_Type">
493. <xsd:sequence>
494. <xsd:element name="Page" type="Page\_Type" minOccurs="0"
495. maxOccurs="unbounded" />
496. </xsd:sequence>
497. </xsd:complexType>
498. <xsd:complexType name="Page\_Type">
499. <xsd:all>
500. <xsd:element name="PageSheet" type="PageSheet\_Type" minOccurs="0"
501. maxOccurs="1" />
502. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1" />
503. </xsd:all>
504. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
505. <xsd:attribute name="Name" type="xsd:string" />
506. <xsd:attribute name="NameU" type="xsd:string" />
507. <xsd:attribute name="IsCustomName" type="xsd:boolean" />
508. <xsd:attribute name="IsCustomNameU" type="xsd:boolean" />
509. <xsd:attribute name="Background" type="xsd:boolean" />
510. <xsd:attribute name="BackPage" type="xsd:unsignedInt" />
511. <xsd:attribute name="ViewScale" type="xsd:double" />
512. <xsd:attribute name="ViewCenterX" type="xsd:double" />
513. <xsd:attribute name="ViewCenterY" type="xsd:double" />
514. <xsd:attribute name="ReviewerID" type="xsd:unsignedInt" />
515. <xsd:attribute name="AssociatedPage" type="xsd:unsignedInt" />
516. </xsd:complexType>
517. <xsd:complexType name="EventList\_Type">
518. <xsd:sequence>
519. <xsd:element name="EventItem" type="EventItem\_Type" minOccurs="0"
520. maxOccurs="unbounded" />
521. </xsd:sequence>
522. </xsd:complexType>
523. <xsd:complexType name="EventItem\_Type">
524. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
525. <xsd:attribute name="Action" type="xsd:unsignedShort" use="required" />
526. <xsd:attribute name="EventCode" type="xsd:unsignedShort" use="required" />
527. <xsd:attribute name="Enabled" type="xsd:boolean" />
528. <xsd:attribute name="Target" type="xsd:string" use="required" />
529. <xsd:attribute name="TargetArgs" type="xsd:string" use="required" />
530. </xsd:complexType>
531. <xsd:complexType name="HeaderFooter\_Type">
532. <xsd:all>
533. <xsd:element name="HeaderMargin" type="HeaderMargin\_Type" minOccurs="0"
534. maxOccurs="1" />
535. <xsd:element name="FooterMargin" type="FooterMargin\_Type" minOccurs="0"
536. maxOccurs="1" />
537. <xsd:element name="HeaderLeft" type="HeaderLeft\_Type" minOccurs="0"
538. maxOccurs="1" />
539. <xsd:element name="HeaderCenter" type="HeaderCenter\_Type" minOccurs="0"
540. maxOccurs="1" />
541. <xsd:element name="HeaderRight" type="HeaderRight\_Type" minOccurs="0"
542. maxOccurs="1" />
543. <xsd:element name="FooterLeft" type="FooterLeft\_Type" minOccurs="0"
544. maxOccurs="1" />
545. <xsd:element name="FooterCenter" type="FooterCenter\_Type" minOccurs="0"
546. maxOccurs="1" />
547. <xsd:element name="FooterRight" type="FooterRight\_Type" minOccurs="0"
548. maxOccurs="1" />
549. <xsd:element name="HeaderFooterFont" type="HeaderFooterFont\_Type" minOccurs="0"
550. maxOccurs="1" />
551. </xsd:all>
552. <xsd:attribute name="HeaderFooterColor" type="xsd:string" />
553. </xsd:complexType>
554. <xsd:complexType name="HeaderMargin\_Type">
555. <xsd:simpleContent>
556. <xsd:extension base="xsd:double">
557. <xsd:attribute name="Unit" type="xsd:string" />
558. </xsd:extension>
559. </xsd:simpleContent>
560. </xsd:complexType>
561. <xsd:complexType name="FooterMargin\_Type">
562. <xsd:simpleContent>
563. <xsd:extension base="xsd:double">
564. <xsd:attribute name="Unit" type="xsd:string" />
565. </xsd:extension>
566. </xsd:simpleContent>
567. </xsd:complexType>
568. <xsd:complexType name="HeaderLeft\_Type">
569. <xsd:simpleContent>
570. <xsd:extension base="xsd:string" />
571. </xsd:simpleContent>
572. </xsd:complexType>
573. <xsd:complexType name="HeaderCenter\_Type">
574. <xsd:simpleContent>
575. <xsd:extension base="xsd:string" />
576. </xsd:simpleContent>
577. </xsd:complexType>
578. <xsd:complexType name="HeaderRight\_Type">
579. <xsd:simpleContent>
580. <xsd:extension base="xsd:string" />
581. </xsd:simpleContent>
582. </xsd:complexType>
583. <xsd:complexType name="FooterLeft\_Type">
584. <xsd:simpleContent>
585. <xsd:extension base="xsd:string" />
586. </xsd:simpleContent>
587. </xsd:complexType>
588. <xsd:complexType name="FooterCenter\_Type">
589. <xsd:simpleContent>
590. <xsd:extension base="xsd:string" />
591. </xsd:simpleContent>
592. </xsd:complexType>
593. <xsd:complexType name="FooterRight\_Type">
594. <xsd:simpleContent>
595. <xsd:extension base="xsd:string" />
596. </xsd:simpleContent>
597. </xsd:complexType>
598. <xsd:complexType name="HeaderFooterFont\_Type">
599. <xsd:attribute name="Height" type="xsd:int" />
600. <xsd:attribute name="Width" type="xsd:int" />
601. <xsd:attribute name="Escapement" type="xsd:int" />
602. <xsd:attribute name="Orientation" type="xsd:int" />
603. <xsd:attribute name="Weight" type="xsd:int" />
604. <xsd:attribute name="Italic" type="xsd:unsignedByte" />
605. <xsd:attribute name="Underline" type="xsd:unsignedByte" />
606. <xsd:attribute name="StrikeOut" type="xsd:unsignedByte" />
607. <xsd:attribute name="CharSet" type="xsd:unsignedByte" />
608. <xsd:attribute name="OutPrecision" type="xsd:unsignedByte" />
609. <xsd:attribute name="ClipPrecision" type="xsd:unsignedByte" />
610. <xsd:attribute name="Quality" type="xsd:unsignedByte" />
611. <xsd:attribute name="PitchAndFamily" type="xsd:unsignedByte" />
612. <xsd:attribute name="FaceName" type="xsd:string" />
613. </xsd:complexType>
614. <xsd:complexType name="DataConnections\_Type">
615. <xsd:sequence>
616. <xsd:element name="DataConnection" type="DataConnection\_Type" minOccurs="1"
617. maxOccurs="unbounded" />
618. </xsd:sequence>
619. <xsd:attribute name="NextID" type="xsd:unsignedInt" use="required" />
620. </xsd:complexType>
621. <xsd:complexType name="DataConnection\_Type">
622. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
623. <xsd:attribute name="FileName" type="xsd:string" use="required" />
624. <xsd:attribute name="ConnectionString" type="xsd:string" />
625. <xsd:attribute name="Command" type="xsd:string" />
626. <xsd:attribute name="FriendlyName" type="xsd:string" />
627. <xsd:attribute name="Timeout" type="xsd:unsignedInt" />
628. <xsd:attribute name="AlwaysUseConnectionFile" type="xsd:boolean" />
629. </xsd:complexType>
630. <xsd:complexType name="DataRecordSets\_Type">
631. <xsd:sequence>
632. <xsd:element name="DataRecordSet" type="DataRecordSet\_Type" minOccurs="0"
633. maxOccurs="unbounded" />
634. </xsd:sequence>
635. <xsd:attribute name="NextID" type="xsd:unsignedInt" use="required" />
636. <xsd:attribute name="ActiveRecordsetID" type="xsd:unsignedInt" />
637. <xsd:attribute name="DataWindowOrder" type="xsd:string" />
638. </xsd:complexType>
639. <xsd:complexType name="DataRecordSet\_Type">
640. <xsd:sequence>
641. <xsd:element name="Rel" type="Rel\_Type" minOccurs="1" maxOccurs="1" />
642. <xsd:element name="DataColumns" type="DataColumns\_Type" minOccurs="1"
643. maxOccurs="1" />
644. <xsd:element name="PrimaryKey" type="PrimaryKey\_Type" minOccurs="0"
645. maxOccurs="unbounded" />
646. <xsd:element name="RowMap" type="RowMap\_Type" minOccurs="0"
647. maxOccurs="unbounded" />
648. <xsd:element name="RefreshConflict" type="RefreshConflict\_Type" minOccurs="0"
649. maxOccurs="unbounded" />
650. <xsd:element name="AutoLinkComparison" type="AutoLinkComparison\_Type"
651. minOccurs="0" maxOccurs="unbounded" />
652. </xsd:sequence>
653. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
654. <xsd:attribute name="ConnectionID" type="xsd:unsignedInt" />
655. <xsd:attribute name="Command" type="xsd:string" />
656. <xsd:attribute name="Options" type="xsd:unsignedInt" />
657. <xsd:attribute name="TimeRefreshed" type="xsd:dateTime" />
658. <xsd:attribute name="NextRowID" type="xsd:unsignedInt" />
659. <xsd:attribute name="Name" type="xsd:string" />
660. <xsd:attribute name="RowOrder" type="xsd:boolean" />
661. <xsd:attribute name="RefreshOverwriteAll" type="xsd:boolean" />
662. <xsd:attribute name="RefreshNoReconciliationUI" type="xsd:boolean" />
663. <xsd:attribute name="RefreshInterval" type="xsd:unsignedInt" />
664. <xsd:attribute name="ReplaceLinks" type="xsd:unsignedInt" />
665. <xsd:attribute name="Checksum" type="xsd:unsignedInt" />
666. </xsd:complexType>
667. <xsd:complexType name="DataColumns\_Type">
668. <xsd:sequence>
669. <xsd:element name="DataColumn" type="DataColumn\_Type" minOccurs="1"
670. maxOccurs="unbounded" />
671. </xsd:sequence>
672. <xsd:attribute name="SortColumn" type="xsd:string" />
673. <xsd:attribute name="SortAsc" type="xsd:boolean" />
674. </xsd:complexType>
675. <xsd:complexType name="DataColumn\_Type">
676. <xsd:attribute name="ColumnNameID" type="xsd:string" use="required" />
677. <xsd:attribute name="Name" type="xsd:string" use="required" />
678. <xsd:attribute name="Label" type="xsd:string" use="required" />
679. <xsd:attribute name="OrigLabel" type="xsd:string" />
680. <xsd:attribute name="LangID" type="xsd:unsignedInt" />
681. <xsd:attribute name="Calendar" type="xsd:unsignedShort" />
682. <xsd:attribute name="DataType" type="xsd:unsignedShort" />
683. <xsd:attribute name="UnitType" type="xsd:string" />
684. <xsd:attribute name="Currency" type="xsd:unsignedShort" />
685. <xsd:attribute name="Degree" type="xsd:unsignedInt" />
686. <xsd:attribute name="DisplayWidth" type="xsd:unsignedInt" />
687. <xsd:attribute name="DisplayOrder" type="xsd:unsignedInt" />
688. <xsd:attribute name="Mapped" type="xsd:boolean" />
689. <xsd:attribute name="Hyperlink" type="xsd:boolean" />
690. </xsd:complexType>
691. <xsd:complexType name="PrimaryKey\_Type">
692. <xsd:sequence>
693. <xsd:element name="RowKeyValue" type="RowKeyValue\_Type" minOccurs="0"
694. maxOccurs="unbounded" />
695. </xsd:sequence>
696. <xsd:attribute name="ColumnNameID" type="xsd:string" use="required" />
697. </xsd:complexType>
698. <xsd:complexType name="RowKeyValue\_Type">
699. <xsd:attribute name="RowID" type="xsd:unsignedInt" use="required" />
700. <xsd:attribute name="Value" type="xsd:string" use="required" />
701. </xsd:complexType>
702. <xsd:complexType name="RowMap\_Type">
703. <xsd:attribute name="RowID" type="xsd:unsignedInt" use="required" />
704. <xsd:attribute name="PageID" type="xsd:unsignedInt" use="required" />
705. <xsd:attribute name="ShapeID" type="xsd:unsignedInt" use="required" />
706. </xsd:complexType>
707. <xsd:complexType name="RefreshConflict\_Type">
708. <xsd:attribute name="RowID" type="xsd:unsignedInt" use="required" />
709. <xsd:attribute name="ShapeID" type="xsd:unsignedInt" use="required" />
710. <xsd:attribute name="PageID" type="xsd:unsignedInt" use="required" />
711. </xsd:complexType>
712. <xsd:complexType name="AutoLinkComparison\_Type">
713. <xsd:attribute name="ColumnName" type="xsd:string" use="required" />
714. <xsd:attribute name="ContextType" type="xsd:unsignedInt" use="required" />
715. <xsd:attribute name="ContextTypeLabel" type="xsd:string" />
716. </xsd:complexType>
717. <xsd:complexType name="PublishSettings\_Type">
718. <xsd:sequence>
719. <xsd:element name="PublishedPage" type="PublishedPage\_Type" minOccurs="0"
720. maxOccurs="unbounded" />
721. <xsd:element name="RefreshableData" type="RefreshableData\_Type" minOccurs="0"
722. maxOccurs="unbounded" />
723. </xsd:sequence>
724. </xsd:complexType>
725. <xsd:complexType name="Comments\_Type">
726. <xsd:sequence>
727. <xsd:element name="AuthorList" type="AuthorList\_Type" minOccurs="0"
728. maxOccurs="1" />
729. <xsd:element name="CommentList" type="CommentList\_Type" minOccurs="0"
730. maxOccurs="1" />
731. </xsd:sequence>
732. <xsd:attribute name="ShowCommentTags" type="xsd:boolean" />
733. </xsd:complexType>
734. <xsd:complexType name="AuthorList\_Type">
735. <xsd:sequence>
736. <xsd:element name="AuthorEntry" type="AuthorEntry\_Type" minOccurs="0"
737. maxOccurs="unbounded" />
738. </xsd:sequence>
739. </xsd:complexType>
740. <xsd:complexType name="AuthorEntry\_Type">
741. <xsd:attribute name="Name" type="xsd:string" />
742. <xsd:attribute name="Initials" type="xsd:string" />
743. <xsd:attribute name="ResolutionID" type="xsd:string" />
744. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
745. </xsd:complexType>
746. <xsd:complexType name="CommentList\_Type">
747. <xsd:sequence>
748. <xsd:element name="CommentEntry" type="CommentEntry\_Type" minOccurs="0"
749. maxOccurs="unbounded" />
750. </xsd:sequence>
751. </xsd:complexType>
752. <xsd:complexType name="CommentEntry\_Type">
753. <xsd:simpleContent>
754. <xsd:extension base="xsd:string">
755. <xsd:attribute name="AuthorID" type="xsd:unsignedInt" use="required" />
756. <xsd:attribute name="PageID" type="xsd:unsignedInt" use="required" />
757. <xsd:attribute name="ShapeID" type="xsd:unsignedInt" />
758. <xsd:attribute name="Date" type="xsd:dateTime" use="required" />
759. <xsd:attribute name="EditDate" type="xsd:dateTime" />
760. <xsd:attribute name="Done" type="xsd:boolean" />
761. <xsd:attribute name="CommentID" type="xsd:unsignedInt" use="required" />
762. <xsd:attribute name="AutoCommentType" type="xsd:unsignedInt" />
763. </xsd:extension>
764. </xsd:simpleContent>
765. </xsd:complexType>
766. <xsd:complexType name="PublishedPage\_Type">
767. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
768. </xsd:complexType>
769. <xsd:complexType name="RefreshableData\_Type">
770. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
771. </xsd:complexType>
772. <xsd:complexType name="RefBy\_Type">
773. <xsd:attribute name="T" type="xsd:string" use="required" />
774. <xsd:attribute name="ID" type="xsd:unsignedInt" use="required" />
775. </xsd:complexType>
776. <xsd:complexType name="Extensions\_Type">
777. <xsd:sequence>
778. <xsd:element name="CellDef" type="CellDef\_Type" minOccurs="0"
779. maxOccurs="unbounded" />
780. <xsd:element name="FunctionDef" type="FunctionDef\_Type" minOccurs="0"
781. maxOccurs="unbounded" />
782. <xsd:element name="SectionDef" type="SectionDef\_Type" minOccurs="0"
783. maxOccurs="unbounded" />
784. </xsd:sequence>
785. </xsd:complexType>
786. <xsd:complexType name="CellDef\_Type">
787. <xsd:attribute name="N" type="xsd:string" use="required" />
788. <xsd:attribute name="T" type="xsd:token" use="required" />
789. <xsd:attribute name="F" type="xsd:string" />
790. <xsd:attribute name="IX" type="xsd:unsignedByte" />
791. <xsd:attribute name="S" type="xsd:unsignedByte" />
792. </xsd:complexType>
793. <xsd:complexType name="FunctionDef\_Type">
794. <xsd:attribute name="N" type="xsd:string" use="required" />
795. </xsd:complexType>
796. <xsd:complexType name="SectionDef\_Type">
797. <xsd:sequence>
798. <xsd:element name="CellDef" type="CellDef\_Type" minOccurs="0"
799. maxOccurs="unbounded" />
800. <xsd:element name="RowDef" type="RowDef\_Type" minOccurs="0" maxOccurs="1" />
801. </xsd:sequence>
802. <xsd:attribute name="N" type="xsd:string" use="required" />
803. <xsd:attribute name="T" type="xsd:string" />
804. <xsd:attribute name="S" type="xsd:unsignedByte" />
805. </xsd:complexType>
806. <xsd:complexType name="RowDef\_Type">
807. <xsd:sequence>
808. <xsd:element name="CellDef" type="CellDef\_Type" minOccurs="0"
809. maxOccurs="unbounded" />
810. </xsd:sequence>
811. </xsd:complexType>
812. <xsd:complexType name="Rel\_Type">
813. <xsd:attribute ref="r:id" use="required"/>
814. </xsd:complexType>
815. </xsd:schema>

# Appendix B: 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 SharePoint Server 2013
* Microsoft SharePoint Server 2016
* Microsoft Visio 2013
* Microsoft Visio 2016
* Microsoft Visio 2019
* Microsoft SharePoint Server 2019
* Microsoft Visio 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.

# 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 |
| --- | --- | --- |
| [6](#Section_eb13775f6fac47bd8f4c9b907b18e6cf) Appendix B: Product Behavior | Updated list of supported products. | major |

# Index

A

Abs

[function token definitions](#section_de1caf25cfd04f84b07182f4d80119a5) 236

ACos

[function token definitions](#section_aff52110bee74fdc9f54d2e0602a6fc2) 237

Add

[function token definitions](#section_7214059a9c084ed3a185d7a4acee8016) 237

And

[function token definitions](#section_286beba8a1f54dbb84aea7951e79944b) 238

Ang360

[function token definitions](#section_eae4a0004a604ca9b5bd73eafdc156ad) 239

angleInternalUnitNumber

[custom internal unit types](#section_56a64f828aaa460f9359bb6b81f2231e) 361

AngleToLoc

[function token definitions](#section_270e13a182514b188eec77cdb8318fb7) 239

AngleToPar

[function token definitions](#section_dc6342a410da4f60a406e73a0e223996) 240

App

[part enumeration](#section_85e85f4058134276aed798b4d83506d0) 74

[App XML part](#section_85e85f4058134276aed798b4d83506d0) 74

[Applicability](#section_eca7be3c663f49d0ac55abed0bbf36f0) 28

ASin

[function token definitions](#section_0a941c0f2a1946c6ace0112360825605) 241

ATan

[function token definitions](#section_5e49eee8ea7543d29bb6a48333dfeae2) 242

ATan2

[function token definitions](#section_4b97d462d43b474095a450d46d183c24) 241

B

BitAnd

[function token definitions](#section_11bf1f4b30e448ad813fd3750c928c2f) 242

BitNot

[function token definitions](#section_13700d004fba432b850f079d734aceb1) 242

BitOr

[function token definitions](#section_d5902f73befb43478ae391b1391af6e0) 243

BitXor

[function token definitions](#section_c4c2c8d55f8242e991f77d8427af753d) 243

BkgPageName

[function token definitions](#section_ffd631a7f57646e1a057d30d5f551ac8) 244

Blend

[function token definitions](#section_9158d07336f24c4ea7cb5a8859b83800) 244

Bound

[function token definitions](#section_eeb96ed68f3e474fadb5e497e1690748) 245

C

Cat

[function token definitions](#section_25a98ccb3134489c91e9bc3593146095) 247

Category

[function token definitions](#section_0ea08f1dc69740d58e2ce69312e26f77) 247

Ceiling

[function token definitions](#section_8d61fd3b69fb42d78e0327d418e9367c) 247

CellIsThemed

[function token definitions](#section_7c2c0bc34bd346b1b3688b2e907cda67) 248

Cells

[ShapeSheet properties](#section_c31ebb48e79243088bc0ebcba281ce20) 160

[Change tracking](#section_cc905dd188964df99f397219c123dd41) 458

Char

[function token definitions](#section_333e69b5fbf84cbaa537d3cff1e58b3a) 249

Comments overview

[Structures](#section_60086b03a61f4e25ac5b943c02a66d8e) 65

[Common data types and fields](#section_1af3bf7bc2424b53a2ceef81083d5cb7) 30

Company

[function token definitions](#section_6d00ac94274b4613908e812d04a4515f) 249

Compound file

[file structure overview](#section_ff1e06b02ee244c8b28670c07383662a) 30

Conceptual overview

[Structures](#section_df6e4f8dd9c64d5e8b24c23e9c5e075e) 31

ContentType

[part enumeration](#section_15a5e9d316534a27b326ef57c87010c9) 74

Core

part enumeration ([section 2.3.2.3](#section_f7c9761b3ff14dd59319ebd0af457c99) 74, [section 2.3.2.4](#section_c75d20e9d458436bbb4c97c3202c2966) 75)

[Core XML part](#section_f7c9761b3ff14dd59319ebd0af457c99) 74

Cos

[function token definitions](#section_d21c5fedafb54f118f4a0b20953a0641) 249

CosH

[function token definitions](#section_2a282ab1d43142c08d7a439b184d767f) 250

Creator

[function token definitions](#section_08ece44588164cefa3bf994c88bceca0) 250

[Custom input type definitions](#section_82b18e3246c3426ebe8160954c5fd74e) 357

[vBoolean](#section_59248e6377544b5ab8f4a81bddfd8548) 357

[vColor](#section_6953a98a0e984d3e9fe95484589a4695) 357

[vDouble](#section_ebd0ca9fd0f14fd5ab981200c1d026cc) 357

[vDoubleEx](#section_311bb3d6a0404a929b29e51641563a9c) 358

[vFloat](#section_91b47f1c6d1441fca31a1019497abaa7) 358

[vSignedInt](#section_3b7ec511bc8748a6b8ffeb03611b6e81) 358

[vSignedLong](#section_f28297223e2e4694b44a0bdcfc5acd44) 359

[vString](#section_706c71a7cb044b7e97b6f136c13acd60) 359

[vUnsignedInt](#section_2bbc84c7c544464296b688e7ecf5e249) 359

[vUnsignedLong](#section_7f9751418d77469298d44234d34095eb) 359

[Custom internal unit types](#section_ea6328b8644b4f05bc9b03b6415eb764) 361

[angleInternalUnitNumber](#section_56a64f828aaa460f9359bb6b81f2231e) 361

[durationInternalUnitNumber](#section_f533f47261a840e0890ae39725d41eee) 361

[lengthInternalUnitNumber](#section_516ff6cd424241d09233b76aefc64430) 361

[typographicInternalUnitNumber](#section_60ace6256a86466cbdd1011164b51cce) 361

[Custom structures](#section_3f16ca44878a412da22a6ead5979310c) 362

[vCalendar](#section_5d9ab6aa8a0646468771d3ff0e02ce96) 362

[vCurrencyID](#section_afa85c0df5d947488108d3e5ac691720) 362

[vFormatString](#section_ff39e94802a4435596e662456c2a775f) 371

[vLanguageID](#section_b4a726f70bc142dcad410d3c6b95204f) 377

[Custom token groupings](#section_e1dd43853d0c435ea7459a585a0bb919) 360

[vAngle](#section_e147725fd51545e5b83f6d8b09eba52b) 360

vAny ([section 2.5.7.2](#section_4a97b6616cca49a7911670b57c9379d2) 360, [section 2.5.7.3](#section_f809c3999b1c4a688984764d079d153c) 360)

[vNum](#section_40645a2108cc43a38b42bfb643bc76ed) 361

vNumAny ([section 2.5.7.5](#section_25d21d600457404d90f42e5ae1c55682) 361, [section 2.5.7.6](#section_53aa08d870b047449a94608d01487e40) 361)

[vUnitType](#section_46b90760f3eb4ae99c16c3ccac56f59f) 361

CY

[function token definitions](#section_80ffe2efdd6e4f56a5e010f93c78ee22) 250

D

[Data connections](#section_0c83304b6f034218bfb1a49d51060e9c) 65

[Data connectivity and refresh](#section_67d73a1ab5b148bf864c1d426a2df206) 65

[data connections](#section_0c83304b6f034218bfb1a49d51060e9c) 65

[Data types and fields - common](#section_1af3bf7bc2424b53a2ceef81083d5cb7) 30

Date

[function token definitions](#section_bdd53253fd9b496bbb28406768c8388c) 251

DateTime

[function token definitions](#section_a792b810916a4fbabb767675d1818aea) 252

DateValue

[function token definitions](#section_81aa96617015499b8c370895a5f76065) 252

Day

[function token definitions](#section_487a4048230b48df8f62c5c49efc703a) 253

DayOfYear

[function token definitions](#section_5ea6a7d6d90c49f5aae6c89872e67d33) 253

Deg

[function token definitions](#section_d3fff50daba54c3ba362c9036793e2a5) 254

DependsOn

[function token definitions](#section_4a2e2be1e90f47efbc484c6d39bdb938) 254

Description

[function token definitions](#section_2f8c464eedcf40399b887e4be83077b9) 255

Details

[App XML part](#section_85e85f4058134276aed798b4d83506d0) 74

[common data types and fields](#section_1af3bf7bc2424b53a2ceef81083d5cb7) 30

[Core XML part](#section_f7c9761b3ff14dd59319ebd0af457c99) 74

[formula evaluation and shape property recalculation](#section_aa03f278e801428da9e12febd62c893b) 234

Details – custom input type definitions

[vBoolean](#section_59248e6377544b5ab8f4a81bddfd8548) 357

[vColor](#section_6953a98a0e984d3e9fe95484589a4695) 357

[vDouble](#section_ebd0ca9fd0f14fd5ab981200c1d026cc) 357

[vDoubleEx](#section_311bb3d6a0404a929b29e51641563a9c) 358

[vFloat](#section_91b47f1c6d1441fca31a1019497abaa7) 358

[vSignedInt](#section_3b7ec511bc8748a6b8ffeb03611b6e81) 358

[vSignedLong](#section_f28297223e2e4694b44a0bdcfc5acd44) 359

[vString](#section_706c71a7cb044b7e97b6f136c13acd60) 359

[vUnsignedInt](#section_2bbc84c7c544464296b688e7ecf5e249) 359

[vUnsignedLong](#section_7f9751418d77469298d44234d34095eb) 359

Details – custom internal unit types

[angleInternalUnitNumber](#section_56a64f828aaa460f9359bb6b81f2231e) 361

[durationInternalUnitNumber](#section_f533f47261a840e0890ae39725d41eee) 361

[lengthInternalUnitNumber](#section_516ff6cd424241d09233b76aefc64430) 361

[typographicInternalUnitNumber](#section_60ace6256a86466cbdd1011164b51cce) 361

Details – custom structures

[vCalendar](#section_5d9ab6aa8a0646468771d3ff0e02ce96) 362

[vCurrencyID](#section_afa85c0df5d947488108d3e5ac691720) 362

[vFormatString](#section_ff39e94802a4435596e662456c2a775f) 371

[vLanguageID](#section_b4a726f70bc142dcad410d3c6b95204f) 377

Details – custom token groupings

[vAngle](#section_e147725fd51545e5b83f6d8b09eba52b) 360

vAny ([section 2.5.7.2](#section_4a97b6616cca49a7911670b57c9379d2) 360, [section 2.5.7.3](#section_f809c3999b1c4a688984764d079d153c) 360)

[vNum](#section_40645a2108cc43a38b42bfb643bc76ed) 361

vNumAny ([section 2.5.7.5](#section_25d21d600457404d90f42e5ae1c55682) 361, [section 2.5.7.6](#section_53aa08d870b047449a94608d01487e40) 361)

[vUnitType](#section_46b90760f3eb4ae99c16c3ccac56f59f) 361

Details - file structure

[App](#section_85e85f4058134276aed798b4d83506d0) 74

[ContentType](#section_15a5e9d316534a27b326ef57c87010c9) 74

Core ([section 2.3.2.3](#section_f7c9761b3ff14dd59319ebd0af457c99) 74, [section 2.3.2.4](#section_c75d20e9d458436bbb4c97c3202c2966) 75)

[Rels](#section_d80431dd8a6a45f7b74cf7599069edbe) 75

Details - formula token definitions

[Abs](#section_de1caf25cfd04f84b07182f4d80119a5) 236

[ACos](#section_aff52110bee74fdc9f54d2e0602a6fc2) 237

[Add](#section_7214059a9c084ed3a185d7a4acee8016) 237

[And](#section_286beba8a1f54dbb84aea7951e79944b) 238

[Ang360](#section_eae4a0004a604ca9b5bd73eafdc156ad) 239

[AngleToLoc](#section_270e13a182514b188eec77cdb8318fb7) 239

[AngleToPar](#section_dc6342a410da4f60a406e73a0e223996) 240

[ASin](#section_0a941c0f2a1946c6ace0112360825605) 241

[ATan](#section_5e49eee8ea7543d29bb6a48333dfeae2) 242

[ATan2](#section_4b97d462d43b474095a450d46d183c24) 241

[BitAnd](#section_11bf1f4b30e448ad813fd3750c928c2f) 242

[BitNot](#section_13700d004fba432b850f079d734aceb1) 242

[BitOr](#section_d5902f73befb43478ae391b1391af6e0) 243

[BitXor](#section_c4c2c8d55f8242e991f77d8427af753d) 243

[BkgPageName](#section_ffd631a7f57646e1a057d30d5f551ac8) 244

[Blend](#section_9158d07336f24c4ea7cb5a8859b83800) 244

[Bound](#section_eeb96ed68f3e474fadb5e497e1690748) 245

[Cat](#section_25a98ccb3134489c91e9bc3593146095) 247

[Category](#section_0ea08f1dc69740d58e2ce69312e26f77) 247

[Ceiling](#section_8d61fd3b69fb42d78e0327d418e9367c) 247

[CellIsThemed](#section_7c2c0bc34bd346b1b3688b2e907cda67) 248

[Char](#section_333e69b5fbf84cbaa537d3cff1e58b3a) 249

[Company](#section_6d00ac94274b4613908e812d04a4515f) 249

[Cos](#section_d21c5fedafb54f118f4a0b20953a0641) 249

[CosH](#section_2a282ab1d43142c08d7a439b184d767f) 250

[Creator](#section_08ece44588164cefa3bf994c88bceca0) 250

[CY](#section_80ffe2efdd6e4f56a5e010f93c78ee22) 250

[Date](#section_bdd53253fd9b496bbb28406768c8388c) 251

[DateTime](#section_a792b810916a4fbabb767675d1818aea) 252

[DateValue](#section_81aa96617015499b8c370895a5f76065) 252

[Day](#section_487a4048230b48df8f62c5c49efc703a) 253

[DayOfYear](#section_5ea6a7d6d90c49f5aae6c89872e67d33) 253

[Deg](#section_d3fff50daba54c3ba362c9036793e2a5) 254

[DependsOn](#section_4a2e2be1e90f47efbc484c6d39bdb938) 254

[Description](#section_2f8c464eedcf40399b887e4be83077b9) 255

[Directory](#section_e53d4962d1074da6bbabd6346b3cd8f1) 255

[Div](#section_b5041cf5c8f64ae68a5484adefe92ea5) 255

[DocCreation](#section_ef2fd7c945b8422995d9a9f8c4ee98fd) 257

[DocLastEdit](#section_504794ac13b347e1b5e0db60997eca53) 257

[DocLastPrint](#section_d53c055825584904b132b704300b449b) 257

[DocLastSave](#section_2c07a217f483446db74e78710a39debe) 258

[EEQ](#section_d20617d820be4fe2994257248484ab16) 258

[EGE](#section_36c336c463724cacaf73b3f53818a803) 258

[EGT](#section_f739ef9f07c94a9db979f49f86977b2f) 259

[ELE](#section_fada1509d0224a95865965ac88c6d06e) 259

[ELT](#section_ef785368ec0f4513a05d1ccefd7d674f) 260

[ENE](#section_a50a1ac332404e36b5de968c8bd5beb2) 260

[FEQ](#section_f505443520b44b46934c402f45ce9d34) 261

[FGE](#section_11f98d222d4d47eea89f4293dfd4f8d4) 261

[FGT](#section_80b6f2f92f5c4ad3a499dc3bd9bf2620) 262

[FieldPicture](#section_9d4b1260b8074a9397c7f40bec839254) 262

[FileName](#section_ccc46e08560c4aedb508c2a65d920277) 263

[Find](#section_b3fd343f55934affbbc28cb7f30bdb07) 263

[FLE](#section_a210058957e64e679f14bdbd51916a09) 264

[Floor](#section_9a55aae38c1a426d89e6227d9c7df4f9) 265

[FLT](#section_ce135996ace44c1bba49a56b0cdcd343) 265

[FNE](#section_071f635730fc48ce9c9941f4ca1c1e9d) 266

[Format](#section_7d448bd36e78408a855898e3e8f7a1b2) 266

[FormatEx](#section_dc74e3e01fd4446fb3be2faae0302f52) 267

[Gravity](#section_4bf49fdb32f84d9e8e4ff4af76a2ea0c) 268

[Guard](#section_1bc6f67f62b947fda85d8043f5fcb3db) 269

HasCategory ([section 2.5.3.60](#section_7b7345dc72004127b0f920a0d76b472a) 268, [section 2.5.3.63](#section_601b043cc6c149e2b68505e4684ccd84) 269, [section 2.5.3.89](#section_c3ddda4326814159afc55cb37c96c386) 282)

[Hour](#section_91374699b2204ce5b95c31786fd78b59) 270

[HSL](#section_bad42784880e4824b03d7924f8c63cde) 270

[Hue](#section_fb20ca3413b143ad9996e10008b86cf5) 271

[HueDiff](#section_f88be40c02344c0f8bedb06784b6f2de) 272

[HyperlinkBase](#section_43bab9bc3ef9432594d32ad7d5273efb) 272

[ID](#section_e642b73baa8f4bba89cf12d8eaa7e15a) 272

[IF](#section_878adfce2ecf4c70b07696deabfd44f3) 273

[IfError](#section_774a75e82635452d9bd0e57b8eac38f3) 273

[Index](#section_89e3fffae5b64e3aac4aaba1d9fa5095) 274

[Int](#section_04cd2cf56ada4a29b2c4202a96c63bfb) 275

[IntersectX](#section_0dd844cbd9204f7792e89100f90de848) 275

[IntersectY](#section_c52a02b4bb514cfc8813d055b581356f) 276

[Intup](#section_b7a6cc665bcf4d2f8f30895ea2cbd5d9) 277

[Is1D](#section_2ade9be38b1b44ffab56b807960a9e8e) 277

[IsErr](#section_3adc56e837f64fbcb5f51aa5cdfd602c) 278

[IsErrNA](#section_be28b7b9cc854b11a4d841c24b637a2b) 278

[IsError](#section_eaa5fccc91eb40dfb1ec249236426760) 279

[IsErrValue](#section_14f8f99fb80046be928c6876ada43aba) 279

[IsThemed](#section_76b00eb0fdfd4154829885cc75a3924e) 279

[Keywords](#section_3b0df195b5804e9a91a7e1047b72910f) 280

[Language](#section_a0d456393f0540e992da80e3a7eb7e35) 280

[Left](#section_2c5b64df7fcc4f249eb1d0b8f6352fbc) 280

[Len](#section_633ce182767f470d8e43c03a1f790c45) 281

[Ln](#section_f0f0f1d977754c8dafec825740fcee46) 281

[Loc](#section_63ebf35c85084bf98aff244baa07a5b9) 282

[LocToLoc](#section_ffcf8a9b78294fc7a01719f3da6fb233) 283

[LocToPar](#section_05b5044787864d23abdb7fe2f5ae7ee2) 283

[Log10](#section_3e04dfe695404f93a62948140f889f6f) 284

[Lookup](#section_0da80ca3da3648dcabb55e220f1bec11) 284

[Lower](#section_44d9fb7cd4c7482dbae97817469fc982) 285

[Lum](#section_0cfdabbbd7114c42bfd53a540ed5efd2) 286

[LumDiff](#section_a89948040f784f409e300b5769c37e0c) 286

[Magnitude](#section_06ef46f1476a4876891350b1caad94ab) 287

[Manager](#section_957ba495588a447ea6354de2165e6ced) 287

[MasterName](#section_d0151a5c30ce408e94b959f9ea5b7d15) 288

[Max](#section_c2aa0ae2542b40628ce77ef43364a739) 288

[Mid](#section_f90591d3e94a4bac82c7d2d1ca2f00d3) 289

[Min](#section_90c6d3f8827b4120bbd6ed0cb4337700) 289

[Minute](#section_bd3dca0fc80248f2b7a5056cef6cccff) 290

[Modulus](#section_238ef9d48941441e9b184fc1a000bffe) 291

[Month](#section_bf317a220fb44e6087e26e9c5d6119ed) 291

[MsoShade](#section_f3cd3198e0ca449ea7946a6563c431cd) 292

[MsoTint](#section_da64c377b5134139a76254998ef51ed5) 292

[Mul](#section_b0301eb2acef4187900168f51276aa44) 293

[NA](#section_919a3595dfb1406586d05932a9778ce0) 294

[Name](#section_7fc3e9dc8bf94bd19098f537b3c7add9) 294

[Not](#section_56e513065d564f48b8101de47266f40f) 295

[Now](#section_0aafebc34b2f4935a0c12c44d9ecbae5) 295

[Nurbs](#section_eecdfe10f361434ca5a827668bad6404) 296

[Or](#section_7e7649a3959744bba80a94910d3e15de) 297

[PageCount](#section_72e6269f3e2c4d20958decfe8084b725) 297

[PageName](#section_0b008de4e2ca412a9a1a1008478074e6) 298

[PageNumber](#section_7fb938242d4d426282c5d1d5aa057bbe) 298

[Par](#section_e755a02255ed4de7b39a9e034eea834d) 298

[Pct](#section_aa28cee0cfe84f1d84c624197f8a7064) 299

[Pi](#section_4cf85926a2a247fb9f01eed19d1d4af0) 299

[Pnt](#section_e634f457cf514dafaa225387dabaa9dc) 299

[Pntx](#section_d85b45d0d22744b59a4d340b6792062e) 300

[PntY](#section_007777496beb41589353a980b445ef28) 300

[PolyLine](#section_b81ec59d54424f1d93b5931a65729ad4) 301

[Pow](#section_8beecf8a9687439f82fcdf8431b3a113) 302

[Rad](#section_edee6b6d3fc44bc49201ffd338389cb5) 303

[Rand](#section_b3236297a6ac402d9d77ed5780d8f841) 303

[Ref](#section_95a7fb9e6d4a46b1b0612adf1b44dd10) 303

[Replace](#section_2e37faebb45f4bd4850d584fc0192c31) 304

[RGB](#section_ab2b0f45fe1e40d797b409c1183a34cb) 304

[Right](#section_ef9c1beb329c4467bab163afa1eb6a13) 305

[Round](#section_b80b8b0e1f3a402d9e53c458ceae7fe4) 306

[Sat](#section_fc9f0443bd7c457a8485056c42ccb976) 306

[SatDiff](#section_99bb58b130c6455da890afd1cb6b169e) 307

[Second](#section_efe145de6fa24bd1aeedc953c3f0f47b) 307

[SetAtRef](#section_579d4837d5644e2dab2411ff86953557) 308

[SetAtRefEval](#section_0920e3704cd04eb7906dca80c45e3cda) 308

[SetAtRefExpr](#section_d211689cfe4b477884b749fffb56c11c) 309

[Shade](#section_46c628269e814dc0a5d7b28ecf07e68f) 309

[ShapeText](#section_bc4adf2fca25453da1a7c1d0c478ccb4) 309

[Sign](#section_a0ad71eea6294f32af8d4ada7cc43153) 310

[Sin](#section_b176ace2b48348a396e98aaee7de5fc4) 311

[SinH](#section_314e786b8a7b44978bbc94f93a320670) 311

[Sqrt](#section_3a41b128096f4e3c8345d8f13d931bf5) 312

[StrSame](#section_f03062a17a094b4a88867b875ca50806) 312

[StrSameEx](#section_8591a495a06a4d90a96606ef21224706) 313

[Sub](#section_b8c448b764f6496f9bc9fdfa7590e8fd) 314

[Subject](#section_6f5c323509474428ae584ae48c4ba6f9) 315

[Sum](#section_64e4f0d78f46483692dbec3de9ce5625) 317

[Tan](#section_3fb0e169d1124f49b74628f306f254d8) 317

[TanH](#section_6a13a9e654344117a672ee9c13678ed9) 318

[TextHeight](#section_f8a915fc26ea405db2e8303a73f4e275) 318

[TextWidth](#section_06b4900e0d4741aa86411d074cf83d31) 318

[Theme](#section_0bb5ca51f92a4e2a8ba6baceba0de879) 319

[ThemeCBV](#section_a6f0642830dd4461b05e8a5a5e86299d) 320

[ThemeGuard](#section_cf7a74ad1aea43779fe7d19c40d92d20) 321

[ThemeProp](#section_bd72b8b3fbf74463ad23cd8a5cc4acfd) 321

[ThemeRestore](#section_b81d964131a24f609b74eba256dd58e2) 322

[ThemeVal](#section_7f01db8e32d540df966f70cc1eeb9225) 322

[Time](#section_c8a0fece684b4a0f85c74a24cac4e813) 323

[TimeValue](#section_4df1ed74a2a64d54b67885cc0999d8fe) 324

[Tint](#section_697059c0410b4266a7313bb37c214a9e) 324

[Title](#section_4ff8fdd26365487bac287126cb630839) 325

[Tone](#section_7a421f2e1a0144fc86f95bc13c1e2705) 325

[Trim](#section_4e6efb5d7de14c2285becf49e08f24f2) 325

[Trunc](#section_f2e18cbeb08a4043802b8919e44308c3) 327

[UMinus](#section_73239ed169d3486aa41085ee7143d47f) 327

[UniChar](#section_68f68010044340899f0560e7d21083b9) 328

[UPlus](#section_385637b4c1d1479cbec5a3d4e630b145) 328

[Upper](#section_61481746becf46e385b7ed542cc68baa) 329

[Use](#section_baa06b88433f4e3093dac8a5b870e6b9) 329

[Version](#section_f28ecd7b2b224f9ba7615d81198860e7) 329

[WeekDay](#section_19b79a97bbea4ed1b4f4cb4bce6dd275) 330

[Year](#section_9b1a3d3d546a45a5a4774c4eb2aa875e) 330

Details – formula token definitions

[Substitute](#section_88777438adb14fb681cf54c405a515a0) 316

Details - parse token definitions

PtgAcre ([section 2.5.4.1](#section_4ed092ea74dc47fd8782a72b8af9b84f) 331, [section 2.5.4.46](#section_28741816c5ba4ee6a73801938ff478c4) 351, [section 2.5.4.47](#section_ca51a3f3efbc40ff844b7c54730e31c9) 352)

PtgAngDD ([section 2.5.4.2](#section_75dc4549eb3d4bfc8e3c73cc5345cd1f) 331, [section 2.5.4.3](#section_aa6993ba93f24fb6b009e88c2eef652c) 332)

[PtgAngDft](#section_aa6993ba93f24fb6b009e88c2eef652c) 332

[PtgAngDMS](#section_5c6f61c206784a5aba6b1d8407ea7bd0) 332

[PtgAngRad](#section_992d1e2bd40941a08b49675a67496aad) 333

[PtgBool](#section_c15b0e7a59664c1fb2ead6a191fa1998) 333

[PtgColorRGB](#section_d63535a566444a6faab1a436c157e546) 334

[PtgCy](#section_6c0f20d1ccc6407f9d084daa4f1e19f2) 334

[PtgDate](#section_5e609c5cd3da4d6ab6ca56bc40435879) 335

[PtgEDay](#section_9411fd36e6e64f2d8022bfb30daefdc6) 335

[PtgEHour](#section_339a94e35a804f36a56ffc3520ab9dbf) 335

[PtgEMin](#section_0bde3065fff94775b972fb4580aae9c7) 336

[PtgErr](#section_93a276b0294d468587050798f619a88d) 336

[PtgESec](#section_81e009e4b1e74007afe74d6c05843476) 337

[PtgEWeek](#section_d6b91ccf04bf458dbe274a44eb2a7ec1) 337

[PtgHectare](#section_6e8458cd0701450986110a116d14cfa9) 337

[PtgNum](#section_7f64df2fdf884411b32281cedbae60c7) 338

[PtgNumCM](#section_329125cb42144abe925c46f77abb9b93) 339

[PtgNumDft](#section_c1c1c5f00830454fbb52f3169c43b3ca) 339

[PtgNumF](#section_4099d68402ca4cf9865d18a93ff5e701) 340

[PtgNumFI](#section_9ed637b4cfc141ffbbb5e04b5d9cebb4) 340

[PtgNumI](#section_47224e0d0ad141fc9ec33a45cfc83822) 340

[PtgNumKM](#section_a0b32592ed6b4b4c8729d2a94ce45397) 341

[PtgNumM](#section_b0afad8bab4543a7975e371aecf81773) 341

[PtgNumMI](#section_dc6dab5c773c48798bb6ab47950d3906) 342

[PtgNumMM](#section_0ec7d8b3108c4eb0b1abff361b35f046) 342

[PtgNumMultiDim](#section_cda376558fd845d5bb4fcd6578dad285) 343

[PtgNumNM](#section_7dd9e771a61f4f47bc5074c0473e39da) 344

[PtgNumPct](#section_2d9e5d598e0249d5a4bccbc8c406d3af) 344

[PtgNumYards](#section_0541f25e2b9544e782cdd9d5263dff38) 345

[PtgPageDft](#section_b444caac3e8b41bfaa556fd84dec0faf) 345

[PtgPnt](#section_74bafdc175d543d4b029b547a63c26b8) 345

[PtgPtgUnsWord](#section_fab3b1105fdd45f58f4a13025fbd7e62) 350

[PtgString](#section_4d0ed5933e39412e841dea295324c20b) 346

[PtgTDurDft](#section_88d43cf9dc69435f84e56fb7df3d786b) 347

[PtgTypCi](#section_312a4de63b514f84837766c28a767143) 348

[PtgTypDi](#section_b9a9ab05727348d586c920a1807b7ef6) 349

[PtgTypeCD](#section_a4caa003fcf04e468b95d146a708f2e7) 347

[PtgTypPi](#section_4bb1f53c92974bdfacc0806610d50e25) 349

[PtgTypPP](#section_2e9fc0fa541c4cf9a4df431e3b94925d) 349

[PtgTypPt](#section_236bed8990fb4120a91478962f363fc5) 350

Details – parse token definitions

[PtgTypDft](#section_3c1afeb46a104059866977b105fcc380) 348

Diagram update overview

[Structures](#section_3b9d352a42924aa9b5fec66141d0c5e1) 67

Directory

[function token definitions](#section_e53d4962d1074da6bbabd6346b3cd8f1) 255

Div

[function token definitions](#section_b5041cf5c8f64ae68a5484adefe92ea5) 255

DocCreation

[function token definitions](#section_ef2fd7c945b8422995d9a9f8c4ee98fd) 257

DocLastEdit

[function token definitions](#section_504794ac13b347e1b5e0db60997eca53) 257

DocLastPrint

[function token definitions](#section_d53c055825584904b132b704300b449b) 257

DocLastSave

[function token definitions](#section_2c07a217f483446db74e78710a39debe) 258

[Document with a Shape on a Page example](#section_29ac4a0b6e9a4fa1984866655395bd92) 431

[document XML part](#section_ee70cff4a87c49d6995739492dcc0c93) 431

[page XML part](#section_dccbb4b5ca0c43ef937900c1acb54377) 435

[pages XML part](#section_6b73fe7e68a44f26846a891950e0329e) 434

[Document with Master Inheritance example](#section_5a4981530d924ca4bad28e1874f5b2a4) 438

[master XML part](#section_58039b3dac8545959c63d2c81c2d212f) 439

[masters XML part](#section_e58f5f2576d84f65ae24d286b10168d7) 438

[page XML part](#section_bf3c0a23fab649a19f9d3aac4c8757eb) 442

Drawing page overview

[Structures](#section_bb1af8e686064cd981b54cf0e8dedf1b) 31

durationInternalUnitNumber

[custom internal unit types](#section_f533f47261a840e0890ae39725d41eee) 361

E

EEQ

[function token definitions](#section_d20617d820be4fe2994257248484ab16) 258

EGE

[function token definitions](#section_36c336c463724cacaf73b3f53818a803) 258

EGT

[function token definitions](#section_f739ef9f07c94a9db979f49f86977b2f) 259

ELE

[function token definitions](#section_fada1509d0224a95865965ac88c6d06e) 259

ELT

[function token definitions](#section_ef785368ec0f4513a05d1ccefd7d674f) 260

ENE

[function token definitions](#section_a50a1ac332404e36b5de968c8bd5beb2) 260

[Examples](#section_336cde0cb48942ddabc684e2063c5e1d) 431

[Document with a Shape on a Page](#section_29ac4a0b6e9a4fa1984866655395bd92) 431

[Document with Master Inheritance](#section_5a4981530d924ca4bad28e1874f5b2a4) 438

[document XML part](#section_ee70cff4a87c49d6995739492dcc0c93) 431

[master XML part](#section_58039b3dac8545959c63d2c81c2d212f) 439

[masters XML part](#section_e58f5f2576d84f65ae24d286b10168d7) 438

page XML part ([section 3.1.3](#section_dccbb4b5ca0c43ef937900c1acb54377) 435, [section 3.2.3](#section_bf3c0a23fab649a19f9d3aac4c8757eb) 442)

[pages XML part](#section_6b73fe7e68a44f26846a891950e0329e) 434

F

FEQ

[function token definitions](#section_f505443520b44b46934c402f45ce9d34) 261

FGE

[function token definitions](#section_11f98d222d4d47eea89f4293dfd4f8d4) 261

FGT

[function token definitions](#section_80b6f2f92f5c4ad3a499dc3bd9bf2620) 262

FieldPicture

[function token definitions](#section_9d4b1260b8074a9397c7f40bec839254) 262

[Fields - security index](#section_d226d9b4b9f2421fa7203e78bf93b19c) 443

[Fields - vendor-extensible](#section_eedb35c873624678b0ce25a081ae2851) 29

File structure

[overview](#section_30536debd7b24b72b59ce80b34b87c6e) 30

File structure overview

[compound file](#section_ff1e06b02ee244c8b28670c07383662a) 30

[markup compatibility](#section_c36178eb1ca34ad8ba6ed5a90642d291) 31

[package](#section_ff1e06b02ee244c8b28670c07383662a) 30

[parts](#section_86c4746a7cad41e0a8ebee8fa420f4c7) 30

[relationships](#section_df1591d7f2814f2da496f29f14f4c0e4) 30

FileName

[function token definitions](#section_ccc46e08560c4aedb508c2a65d920277) 263

Find

[function token definitions](#section_b3fd343f55934affbbc28cb7f30bdb07) 263

FLE

[function token definitions](#section_a210058957e64e679f14bdbd51916a09) 264

Floor

[function token definitions](#section_9a55aae38c1a426d89e6227d9c7df4f9) 265

FLT

[function token definitions](#section_ce135996ace44c1bba49a56b0cdcd343) 265

FNE

[function token definitions](#section_071f635730fc48ce9c9941f4ca1c1e9d) 266

Format

[function token definitions](#section_7d448bd36e78408a855898e3e8f7a1b2) 266

Format overview

[Structures](#section_f63759284c0642dda31cbbab14930e93) 45

FormatEx

[function token definitions](#section_dc74e3e01fd4446fb3be2faae0302f52) 267

Formula evaluation

[ABNF](#section_e617d7e0b0d94019890ccb4de0e3c6bf) 234

[custom input type definitions](#section_82b18e3246c3426ebe8160954c5fd74e) 357

[custom internal unit types](#section_ea6328b8644b4f05bc9b03b6415eb764) 361

[custom structures](#section_3f16ca44878a412da22a6ead5979310c) 362

[custom token groupings](#section_e1dd43853d0c435ea7459a585a0bb919) 360

[full grammar definition](#section_e617d7e0b0d94019890ccb4de0e3c6bf) 234

[function token definitions](#section_841b28f1ba4a46fb9034a9d51de6e0f9) 236

[order of operations](#section_54a9f769fa46425e9d788801551a0804) 235

[parse token definitions](#section_003704de9b914a79a32046dac55d7e28) 331

[reference token definitions](#section_070e1ba51db0433a8a1b08fdac8f6a26) 353

[Formula evaluation and shape property recalculation](#section_aa03f278e801428da9e12febd62c893b) 234

[Formulas](#section_3861a838e4334529bb8f2ec92e61da89) 68

[Full XML schema](#section_5d9a5a4bc3d14d7b902f354f25fe66f4) 444

[Function token definitions](#section_841b28f1ba4a46fb9034a9d51de6e0f9) 236

[Abs](#section_de1caf25cfd04f84b07182f4d80119a5) 236

[ACos](#section_aff52110bee74fdc9f54d2e0602a6fc2) 237

[Add](#section_7214059a9c084ed3a185d7a4acee8016) 237

[And](#section_286beba8a1f54dbb84aea7951e79944b) 238

[Ang360](#section_eae4a0004a604ca9b5bd73eafdc156ad) 239

[AngleToLoc](#section_270e13a182514b188eec77cdb8318fb7) 239

[AngleToPar](#section_dc6342a410da4f60a406e73a0e223996) 240

[ASin](#section_0a941c0f2a1946c6ace0112360825605) 241

[ATan](#section_5e49eee8ea7543d29bb6a48333dfeae2) 242

[ATan2](#section_4b97d462d43b474095a450d46d183c24) 241

[BitAnd](#section_11bf1f4b30e448ad813fd3750c928c2f) 242

[BitNot](#section_13700d004fba432b850f079d734aceb1) 242

[BitOr](#section_d5902f73befb43478ae391b1391af6e0) 243

[BitXor](#section_c4c2c8d55f8242e991f77d8427af753d) 243

[BkgPageName](#section_ffd631a7f57646e1a057d30d5f551ac8) 244

[Blend](#section_9158d07336f24c4ea7cb5a8859b83800) 244

[Bound](#section_eeb96ed68f3e474fadb5e497e1690748) 245

[Cat](#section_25a98ccb3134489c91e9bc3593146095) 247

[Category](#section_0ea08f1dc69740d58e2ce69312e26f77) 247

[Ceiling](#section_8d61fd3b69fb42d78e0327d418e9367c) 247

[CellIsThemed](#section_7c2c0bc34bd346b1b3688b2e907cda67) 248

[Char](#section_333e69b5fbf84cbaa537d3cff1e58b3a) 249

[Company](#section_6d00ac94274b4613908e812d04a4515f) 249

[Cos](#section_d21c5fedafb54f118f4a0b20953a0641) 249

[CosH](#section_2a282ab1d43142c08d7a439b184d767f) 250

[Creator](#section_08ece44588164cefa3bf994c88bceca0) 250

[CY](#section_80ffe2efdd6e4f56a5e010f93c78ee22) 250

[Date](#section_bdd53253fd9b496bbb28406768c8388c) 251

[DateTime](#section_a792b810916a4fbabb767675d1818aea) 252

[DateValue](#section_81aa96617015499b8c370895a5f76065) 252

[Day](#section_487a4048230b48df8f62c5c49efc703a) 253

[DayOfYear](#section_5ea6a7d6d90c49f5aae6c89872e67d33) 253

[Deg](#section_d3fff50daba54c3ba362c9036793e2a5) 254

[DependsOn](#section_4a2e2be1e90f47efbc484c6d39bdb938) 254

[Description](#section_2f8c464eedcf40399b887e4be83077b9) 255

[Directory](#section_e53d4962d1074da6bbabd6346b3cd8f1) 255

[Div](#section_b5041cf5c8f64ae68a5484adefe92ea5) 255

[DocCreation](#section_ef2fd7c945b8422995d9a9f8c4ee98fd) 257

[DocLastEdit](#section_504794ac13b347e1b5e0db60997eca53) 257

[DocLastPrint](#section_d53c055825584904b132b704300b449b) 257

[DocLastSave](#section_2c07a217f483446db74e78710a39debe) 258

[EEQ](#section_d20617d820be4fe2994257248484ab16) 258

[EGE](#section_36c336c463724cacaf73b3f53818a803) 258

[EGT](#section_f739ef9f07c94a9db979f49f86977b2f) 259

[ELE](#section_fada1509d0224a95865965ac88c6d06e) 259

[ELT](#section_ef785368ec0f4513a05d1ccefd7d674f) 260

[ENE](#section_a50a1ac332404e36b5de968c8bd5beb2) 260

[FEQ](#section_f505443520b44b46934c402f45ce9d34) 261

[FGE](#section_11f98d222d4d47eea89f4293dfd4f8d4) 261

[FGT](#section_80b6f2f92f5c4ad3a499dc3bd9bf2620) 262

[FieldPicture](#section_9d4b1260b8074a9397c7f40bec839254) 262

[FileName](#section_ccc46e08560c4aedb508c2a65d920277) 263

[Find](#section_b3fd343f55934affbbc28cb7f30bdb07) 263

[FLE](#section_a210058957e64e679f14bdbd51916a09) 264

[Floor](#section_9a55aae38c1a426d89e6227d9c7df4f9) 265

[FLT](#section_ce135996ace44c1bba49a56b0cdcd343) 265

[FNE](#section_071f635730fc48ce9c9941f4ca1c1e9d) 266

[Format](#section_7d448bd36e78408a855898e3e8f7a1b2) 266

[FormatEx](#section_dc74e3e01fd4446fb3be2faae0302f52) 267

[Gravity](#section_4bf49fdb32f84d9e8e4ff4af76a2ea0c) 268

[Guard](#section_1bc6f67f62b947fda85d8043f5fcb3db) 269

HasCategory ([section 2.5.3.60](#section_7b7345dc72004127b0f920a0d76b472a) 268, [section 2.5.3.63](#section_601b043cc6c149e2b68505e4684ccd84) 269, [section 2.5.3.89](#section_c3ddda4326814159afc55cb37c96c386) 282)

[Hour](#section_91374699b2204ce5b95c31786fd78b59) 270

[HSL](#section_bad42784880e4824b03d7924f8c63cde) 270

[Hue](#section_fb20ca3413b143ad9996e10008b86cf5) 271

[HueDiff](#section_f88be40c02344c0f8bedb06784b6f2de) 272

[HyperlinkBase](#section_43bab9bc3ef9432594d32ad7d5273efb) 272

[ID](#section_e642b73baa8f4bba89cf12d8eaa7e15a) 272

[IF](#section_878adfce2ecf4c70b07696deabfd44f3) 273

[IfError](#section_774a75e82635452d9bd0e57b8eac38f3) 273

[Index](#section_89e3fffae5b64e3aac4aaba1d9fa5095) 274

[Int](#section_04cd2cf56ada4a29b2c4202a96c63bfb) 275

[IntersectX](#section_0dd844cbd9204f7792e89100f90de848) 275

[IntersectY](#section_c52a02b4bb514cfc8813d055b581356f) 276

[Intup](#section_b7a6cc665bcf4d2f8f30895ea2cbd5d9) 277

[Is1D](#section_2ade9be38b1b44ffab56b807960a9e8e) 277

[IsErr](#section_3adc56e837f64fbcb5f51aa5cdfd602c) 278

[IsErrNA](#section_be28b7b9cc854b11a4d841c24b637a2b) 278

[IsError](#section_eaa5fccc91eb40dfb1ec249236426760) 279

[IsErrValue](#section_14f8f99fb80046be928c6876ada43aba) 279

[IsThemed](#section_76b00eb0fdfd4154829885cc75a3924e) 279

[Keywords](#section_3b0df195b5804e9a91a7e1047b72910f) 280

[Language](#section_a0d456393f0540e992da80e3a7eb7e35) 280

[Left](#section_2c5b64df7fcc4f249eb1d0b8f6352fbc) 280

[Len](#section_633ce182767f470d8e43c03a1f790c45) 281

[Ln](#section_f0f0f1d977754c8dafec825740fcee46) 281

[Loc](#section_63ebf35c85084bf98aff244baa07a5b9) 282

[LocToLoc](#section_ffcf8a9b78294fc7a01719f3da6fb233) 283

[LocToPar](#section_05b5044787864d23abdb7fe2f5ae7ee2) 283

[Log10](#section_3e04dfe695404f93a62948140f889f6f) 284

[Lookup](#section_0da80ca3da3648dcabb55e220f1bec11) 284

[Lower](#section_44d9fb7cd4c7482dbae97817469fc982) 285

[Lum](#section_0cfdabbbd7114c42bfd53a540ed5efd2) 286

[LumDiff](#section_a89948040f784f409e300b5769c37e0c) 286

[Magnitude](#section_06ef46f1476a4876891350b1caad94ab) 287

[Manager](#section_957ba495588a447ea6354de2165e6ced) 287

[MasterName](#section_d0151a5c30ce408e94b959f9ea5b7d15) 288

[Max](#section_c2aa0ae2542b40628ce77ef43364a739) 288

[Mid](#section_f90591d3e94a4bac82c7d2d1ca2f00d3) 289

[Min](#section_90c6d3f8827b4120bbd6ed0cb4337700) 289

[Minute](#section_bd3dca0fc80248f2b7a5056cef6cccff) 290

[Modulus](#section_238ef9d48941441e9b184fc1a000bffe) 291

[Month](#section_bf317a220fb44e6087e26e9c5d6119ed) 291

[MsoShade](#section_f3cd3198e0ca449ea7946a6563c431cd) 292

[MsoTint](#section_da64c377b5134139a76254998ef51ed5) 292

[Mul](#section_b0301eb2acef4187900168f51276aa44) 293

[NA](#section_919a3595dfb1406586d05932a9778ce0) 294

[Name](#section_7fc3e9dc8bf94bd19098f537b3c7add9) 294

[Not](#section_56e513065d564f48b8101de47266f40f) 295

[Now](#section_0aafebc34b2f4935a0c12c44d9ecbae5) 295

[Nurbs](#section_eecdfe10f361434ca5a827668bad6404) 296

[Or](#section_7e7649a3959744bba80a94910d3e15de) 297

[PageCount](#section_72e6269f3e2c4d20958decfe8084b725) 297

[PageName](#section_0b008de4e2ca412a9a1a1008478074e6) 298

[PageNumber](#section_7fb938242d4d426282c5d1d5aa057bbe) 298

[Par](#section_e755a02255ed4de7b39a9e034eea834d) 298

[Pct](#section_aa28cee0cfe84f1d84c624197f8a7064) 299

[Pi](#section_4cf85926a2a247fb9f01eed19d1d4af0) 299

[Pnt](#section_e634f457cf514dafaa225387dabaa9dc) 299

[Pntx](#section_d85b45d0d22744b59a4d340b6792062e) 300

[PntY](#section_007777496beb41589353a980b445ef28) 300

[PolyLine](#section_b81ec59d54424f1d93b5931a65729ad4) 301

[Pow](#section_8beecf8a9687439f82fcdf8431b3a113) 302

[Rad](#section_edee6b6d3fc44bc49201ffd338389cb5) 303

[Rand](#section_b3236297a6ac402d9d77ed5780d8f841) 303

[Ref](#section_95a7fb9e6d4a46b1b0612adf1b44dd10) 303

[Replace](#section_2e37faebb45f4bd4850d584fc0192c31) 304

[RGB](#section_ab2b0f45fe1e40d797b409c1183a34cb) 304

[Right](#section_ef9c1beb329c4467bab163afa1eb6a13) 305

[Round](#section_b80b8b0e1f3a402d9e53c458ceae7fe4) 306

[Sat](#section_fc9f0443bd7c457a8485056c42ccb976) 306

[SatDiff](#section_99bb58b130c6455da890afd1cb6b169e) 307

[Second](#section_efe145de6fa24bd1aeedc953c3f0f47b) 307

[SetAtRef](#section_579d4837d5644e2dab2411ff86953557) 308

[SetAtRefEval](#section_0920e3704cd04eb7906dca80c45e3cda) 308

[SetAtRefExpr](#section_d211689cfe4b477884b749fffb56c11c) 309

[Shade](#section_46c628269e814dc0a5d7b28ecf07e68f) 309

[ShapeText](#section_bc4adf2fca25453da1a7c1d0c478ccb4) 309

[Sign](#section_a0ad71eea6294f32af8d4ada7cc43153) 310

[Sin](#section_b176ace2b48348a396e98aaee7de5fc4) 311

[SinH](#section_314e786b8a7b44978bbc94f93a320670) 311

[Sqrt](#section_3a41b128096f4e3c8345d8f13d931bf5) 312

[StrSame](#section_f03062a17a094b4a88867b875ca50806) 312

[StrSameEx](#section_8591a495a06a4d90a96606ef21224706) 313

[Sub](#section_b8c448b764f6496f9bc9fdfa7590e8fd) 314

[Subject](#section_6f5c323509474428ae584ae48c4ba6f9) 315

[Substitute](#section_88777438adb14fb681cf54c405a515a0) 316

[Sum](#section_64e4f0d78f46483692dbec3de9ce5625) 317

[Tan](#section_3fb0e169d1124f49b74628f306f254d8) 317

[TanH](#section_6a13a9e654344117a672ee9c13678ed9) 318

[TextHeight](#section_f8a915fc26ea405db2e8303a73f4e275) 318

[TextWidth](#section_06b4900e0d4741aa86411d074cf83d31) 318

[Theme](#section_0bb5ca51f92a4e2a8ba6baceba0de879) 319

[ThemeCBV](#section_a6f0642830dd4461b05e8a5a5e86299d) 320

[ThemeGuard](#section_cf7a74ad1aea43779fe7d19c40d92d20) 321

[ThemeProp](#section_bd72b8b3fbf74463ad23cd8a5cc4acfd) 321

[ThemeRestore](#section_b81d964131a24f609b74eba256dd58e2) 322

[ThemeVal](#section_7f01db8e32d540df966f70cc1eeb9225) 322

[Time](#section_c8a0fece684b4a0f85c74a24cac4e813) 323

[TimeValue](#section_4df1ed74a2a64d54b67885cc0999d8fe) 324

[Tint](#section_697059c0410b4266a7313bb37c214a9e) 324

[Title](#section_4ff8fdd26365487bac287126cb630839) 325

[Tone](#section_7a421f2e1a0144fc86f95bc13c1e2705) 325

[Trim](#section_4e6efb5d7de14c2285becf49e08f24f2) 325

[Trunc](#section_f2e18cbeb08a4043802b8919e44308c3) 327

[UMinus](#section_73239ed169d3486aa41085ee7143d47f) 327

[UniChar](#section_68f68010044340899f0560e7d21083b9) 328

[UPlus](#section_385637b4c1d1479cbec5a3d4e630b145) 328

[Upper](#section_61481746becf46e385b7ed542cc68baa) 329

[Use](#section_baa06b88433f4e3093dac8a5b870e6b9) 329

[Version](#section_f28ecd7b2b224f9ba7615d81198860e7) 329

[WeekDay](#section_19b79a97bbea4ed1b4f4cb4bce6dd275) 330

[Year](#section_9b1a3d3d546a45a5a4774c4eb2aa875e) 330

G

GeometryRowTypes

[ShapeSheet properties](#section_1aa5e5becf37441abeef5f228cb9f9a3) 148

[Glossary](#section_0c47b9a4b43d4844a54cb6b46c9193df) 23

Gravity

[function token definitions](#section_4bf49fdb32f84d9e8e4ff4af76a2ea0c) 268

Guard

[function token definitions](#section_1bc6f67f62b947fda85d8043f5fcb3db) 269

H

HasCategory

function token definitions ([section 2.5.3.60](#section_7b7345dc72004127b0f920a0d76b472a) 268, [section 2.5.3.63](#section_601b043cc6c149e2b68505e4684ccd84) 269, [section 2.5.3.89](#section_c3ddda4326814159afc55cb37c96c386) 282)

Hour

[function token definitions](#section_91374699b2204ce5b95c31786fd78b59) 270

HSL

[function token definitions](#section_bad42784880e4824b03d7924f8c63cde) 270

Hue

[function token definitions](#section_fb20ca3413b143ad9996e10008b86cf5) 271

HueDiff

[function token definitions](#section_f88be40c02344c0f8bedb06784b6f2de) 272

HyperlinkBase

[function token definitions](#section_43bab9bc3ef9432594d32ad7d5273efb) 272

I

ID

[function token definitions](#section_e642b73baa8f4bba89cf12d8eaa7e15a) 272

IF

[function token definitions](#section_878adfce2ecf4c70b07696deabfd44f3) 273

IfError

[function token definitions](#section_774a75e82635452d9bd0e57b8eac38f3) 273

Images overview

[Structures](#section_c7915a6e1cd84633ad57261c2da081ae) 44

[Implementer - security considerations](#section_570dc5e3600b4cadb164047f29f19897) 443

Index

[function token definitions](#section_89e3fffae5b64e3aac4aaba1d9fa5095) 274

[Index of security fields](#section_d226d9b4b9f2421fa7203e78bf93b19c) 443

[Informative references](#section_cf90bf07bbe144b4847f4ba5181c2e56) 28

Int

[function token definitions](#section_04cd2cf56ada4a29b2c4202a96c63bfb) 275

IntersectX

[function token definitions](#section_0dd844cbd9204f7792e89100f90de848) 275

IntersectY

[function token definitions](#section_c52a02b4bb514cfc8813d055b581356f) 276

[Introduction](#section_d395934930c641f19eebb36b7ebdee31) 23

Intup

[function token definitions](#section_b7a6cc665bcf4d2f8f30895ea2cbd5d9) 277

Is1D

[function token definitions](#section_2ade9be38b1b44ffab56b807960a9e8e) 277

IsErr

[function token definitions](#section_3adc56e837f64fbcb5f51aa5cdfd602c) 278

IsErrNA

[function token definitions](#section_be28b7b9cc854b11a4d841c24b637a2b) 278

IsError

[function token definitions](#section_eaa5fccc91eb40dfb1ec249236426760) 279

IsErrValue

[function token definitions](#section_14f8f99fb80046be928c6876ada43aba) 279

IsThemed

[function token definitions](#section_76b00eb0fdfd4154829885cc75a3924e) 279

K

Keywords

[function token definitions](#section_3b0df195b5804e9a91a7e1047b72910f) 280

L

Language

[function token definitions](#section_a0d456393f0540e992da80e3a7eb7e35) 280

Left

[function token definitions](#section_2c5b64df7fcc4f249eb1d0b8f6352fbc) 280

Len

[function token definitions](#section_633ce182767f470d8e43c03a1f790c45) 281

lengthInternalUnitNumber

[custom internal unit types](#section_516ff6cd424241d09233b76aefc64430) 361

Ln

[function token definitions](#section_f0f0f1d977754c8dafec825740fcee46) 281

Loc

[function token definitions](#section_63ebf35c85084bf98aff244baa07a5b9) 282

[Localization](#section_f26469aff9d74ec790c4aa34726ba9cc) 29

LocToLoc

[function token definitions](#section_ffcf8a9b78294fc7a01719f3da6fb233) 283

LocToPar

[function token definitions](#section_05b5044787864d23abdb7fe2f5ae7ee2) 283

Log10

[function token definitions](#section_3e04dfe695404f93a62948140f889f6f) 284

Lookup

[function token definitions](#section_0da80ca3da3648dcabb55e220f1bec11) 284

Lower

[function token definitions](#section_44d9fb7cd4c7482dbae97817469fc982) 285

Lum

[function token definitions](#section_0cfdabbbd7114c42bfd53a540ed5efd2) 286

LumDiff

[function token definitions](#section_a89948040f784f409e300b5769c37e0c) 286

M

Magnitude

[function token definitions](#section_06ef46f1476a4876891350b1caad94ab) 287

Manager

[function token definitions](#section_957ba495588a447ea6354de2165e6ced) 287

Markup compatibility

[file structure overview](#section_c36178eb1ca34ad8ba6ed5a90642d291) 31

Markup compatibility schema

[structures](#section_c11c44262af449ba905a59117b667f21) 145

MasterName

[function token definitions](#section_d0151a5c30ce408e94b959f9ea5b7d15) 288

Masters overview

[Structures](#section_04e031963af24a52bd32ef5d79b9efc5) 37

Max

[function token definitions](#section_c2aa0ae2542b40628ce77ef43364a739) 288

Mid

[function token definitions](#section_f90591d3e94a4bac82c7d2d1ca2f00d3) 289

Min

[function token definitions](#section_90c6d3f8827b4120bbd6ed0cb4337700) 289

Minute

[function token definitions](#section_bd3dca0fc80248f2b7a5056cef6cccff) 290

Modulus

[function token definitions](#section_238ef9d48941441e9b184fc1a000bffe) 291

Month

[function token definitions](#section_bf317a220fb44e6087e26e9c5d6119ed) 291

MsoShade

[function token definitions](#section_f3cd3198e0ca449ea7946a6563c431cd) 292

MsoTint

[function token definitions](#section_da64c377b5134139a76254998ef51ed5) 292

Mul

[function token definitions](#section_b0301eb2acef4187900168f51276aa44) 293

N

NA

[function token definitions](#section_919a3595dfb1406586d05932a9778ce0) 294

Name

[function token definitions](#section_7fc3e9dc8bf94bd19098f537b3c7add9) 294

[Normative references](#section_aea08658fdb7477c9d255c4522cc3362) 26

Not

[function token definitions](#section_56e513065d564f48b8101de47266f40f) 295

Now

[function token definitions](#section_0aafebc34b2f4935a0c12c44d9ecbae5) 295

Nurbs

[function token definitions](#section_eecdfe10f361434ca5a827668bad6404) 296

O

Or

[function token definitions](#section_7e7649a3959744bba80a94910d3e15de) 297

[Order of operations](#section_54a9f769fa46425e9d788801551a0804) 235

[Overview (synopsis)](#section_29bd5bbcdb6646f9906e140c5a4e59c8) 28

P

Package

[file structure overview](#section_ff1e06b02ee244c8b28670c07383662a) 30

PageCount

[function token definitions](#section_72e6269f3e2c4d20958decfe8084b725) 297

PageName

[function token definitions](#section_0b008de4e2ca412a9a1a1008478074e6) 298

PageNumber

[function token definitions](#section_7fb938242d4d426282c5d1d5aa057bbe) 298

Par

[function token definitions](#section_e755a02255ed4de7b39a9e034eea834d) 298

[Parse token definitions](#section_003704de9b914a79a32046dac55d7e28) 331

[NumKM](#section_a0b32592ed6b4b4c8729d2a94ce45397) 341

PtgAcre ([section 2.5.4.1](#section_4ed092ea74dc47fd8782a72b8af9b84f) 331, [section 2.5.4.46](#section_28741816c5ba4ee6a73801938ff478c4) 351, [section 2.5.4.47](#section_ca51a3f3efbc40ff844b7c54730e31c9) 352)

PtgAngDD ([section 2.5.4.2](#section_75dc4549eb3d4bfc8e3c73cc5345cd1f) 331, [section 2.5.4.3](#section_aa6993ba93f24fb6b009e88c2eef652c) 332)

[PtgAngDft](#section_aa6993ba93f24fb6b009e88c2eef652c) 332

[PtgAngDMS](#section_5c6f61c206784a5aba6b1d8407ea7bd0) 332

[PtgAngRad](#section_992d1e2bd40941a08b49675a67496aad) 333

[PtgBool](#section_c15b0e7a59664c1fb2ead6a191fa1998) 333

[PtgColorRGB](#section_d63535a566444a6faab1a436c157e546) 334

[PtgCy](#section_6c0f20d1ccc6407f9d084daa4f1e19f2) 334

[PtgDate](#section_5e609c5cd3da4d6ab6ca56bc40435879) 335

[PtgEDay](#section_9411fd36e6e64f2d8022bfb30daefdc6) 335

[PtgEHour](#section_339a94e35a804f36a56ffc3520ab9dbf) 335

[PtgEMin](#section_0bde3065fff94775b972fb4580aae9c7) 336

[PtgErr](#section_93a276b0294d468587050798f619a88d) 336

[PtgESec](#section_81e009e4b1e74007afe74d6c05843476) 337

[PtgEWeek](#section_d6b91ccf04bf458dbe274a44eb2a7ec1) 337

[PtgHectare](#section_6e8458cd0701450986110a116d14cfa9) 337

[PtgNum](#section_7f64df2fdf884411b32281cedbae60c7) 338

[PtgNumCM](#section_329125cb42144abe925c46f77abb9b93) 339

[PtgNumDft](#section_c1c1c5f00830454fbb52f3169c43b3ca) 339

[PtgNumF](#section_4099d68402ca4cf9865d18a93ff5e701) 340

[PtgNumFI](#section_9ed637b4cfc141ffbbb5e04b5d9cebb4) 340

[PtgNumI](#section_47224e0d0ad141fc9ec33a45cfc83822) 340

[PtgNumM](#section_b0afad8bab4543a7975e371aecf81773) 341

[PtgNumMI](#section_dc6dab5c773c48798bb6ab47950d3906) 342

[PtgNumMM](#section_0ec7d8b3108c4eb0b1abff361b35f046) 342

[PtgNumMultiDim](#section_cda376558fd845d5bb4fcd6578dad285) 343

[PtgNumNM](#section_7dd9e771a61f4f47bc5074c0473e39da) 344

[PtgNumPct](#section_2d9e5d598e0249d5a4bccbc8c406d3af) 344

[PtgNumYards](#section_0541f25e2b9544e782cdd9d5263dff38) 345

[PtgPageDft](#section_b444caac3e8b41bfaa556fd84dec0faf) 345

[PtgPnt](#section_74bafdc175d543d4b029b547a63c26b8) 345

[PtgPtgUnsWord](#section_fab3b1105fdd45f58f4a13025fbd7e62) 350

[PtgString](#section_4d0ed5933e39412e841dea295324c20b) 346

[PtgTDurDft](#section_88d43cf9dc69435f84e56fb7df3d786b) 347

[PtgTypCD](#section_a4caa003fcf04e468b95d146a708f2e7) 347

[PtgTypCi](#section_312a4de63b514f84837766c28a767143) 348

[PtgTypDft](#section_3c1afeb46a104059866977b105fcc380) 348

[PtgTypDi](#section_b9a9ab05727348d586c920a1807b7ef6) 349

[PtgTypPi](#section_4bb1f53c92974bdfacc0806610d50e25) 349

[PtgTypPP](#section_2e9fc0fa541c4cf9a4df431e3b94925d) 349

[PtgTypPt](#section_236bed8990fb4120a91478962f363fc5) 350

Part enumeration

[App](#section_85e85f4058134276aed798b4d83506d0) 74

[ContentType](#section_15a5e9d316534a27b326ef57c87010c9) 74

Core ([section 2.3.2.3](#section_f7c9761b3ff14dd59319ebd0af457c99) 74, [section 2.3.2.4](#section_c75d20e9d458436bbb4c97c3202c2966) 75)

[Rels](#section_d80431dd8a6a45f7b74cf7599069edbe) 75

[structures](#section_33056f18c2584a29802603c58cbc8bca) 73

Parts

[file structure overview](#section_86c4746a7cad41e0a8ebee8fa420f4c7) 30

[Structures](#section_1e2c12b7de5249978c5f82c8143921b7) 73

Pct

[function token definitions](#section_aa28cee0cfe84f1d84c624197f8a7064) 299

Pi

[function token definitions](#section_4cf85926a2a247fb9f01eed19d1d4af0) 299

Pnt

[function token definitions](#section_e634f457cf514dafaa225387dabaa9dc) 299

Pntx

[function token definitions](#section_d85b45d0d22744b59a4d340b6792062e) 300

PntY

[function token definitions](#section_007777496beb41589353a980b445ef28) 300

PolyLine

[function token definitions](#section_b81ec59d54424f1d93b5931a65729ad4) 301

Pow

[function token definitions](#section_8beecf8a9687439f82fcdf8431b3a113) 302

[Product behavior](#section_eb13775f6fac47bd8f4c9b907b18e6cf) 457

PtgAcre

parse token definitions ([section 2.5.4.1](#section_4ed092ea74dc47fd8782a72b8af9b84f) 331, [section 2.5.4.46](#section_28741816c5ba4ee6a73801938ff478c4) 351, [section 2.5.4.47](#section_ca51a3f3efbc40ff844b7c54730e31c9) 352)

PtgAngDD

parse token definitions ([section 2.5.4.2](#section_75dc4549eb3d4bfc8e3c73cc5345cd1f) 331, [section 2.5.4.3](#section_aa6993ba93f24fb6b009e88c2eef652c) 332)

PtgAngDft

[parse token definitions](#section_aa6993ba93f24fb6b009e88c2eef652c) 332

PtgAngDMS

[parse token definitions](#section_5c6f61c206784a5aba6b1d8407ea7bd0) 332

PtgAngRad

[parse token definitions](#section_992d1e2bd40941a08b49675a67496aad) 333

PtgBool

[parse token definitions](#section_c15b0e7a59664c1fb2ead6a191fa1998) 333

PtgColorRGB

[parse token definitions](#section_d63535a566444a6faab1a436c157e546) 334

PtgCy

[parse token definitions](#section_6c0f20d1ccc6407f9d084daa4f1e19f2) 334

PtgDate

[parse token definitions](#section_5e609c5cd3da4d6ab6ca56bc40435879) 335

PtgEDay

[parse token definitions](#section_9411fd36e6e64f2d8022bfb30daefdc6) 335

PtgEHour

[parse token definitions](#section_339a94e35a804f36a56ffc3520ab9dbf) 335

PtgEMin

[parse token definitions](#section_0bde3065fff94775b972fb4580aae9c7) 336

PtgErr

[parse token definitions](#section_93a276b0294d468587050798f619a88d) 336

PtgESec

[parse token definitions](#section_81e009e4b1e74007afe74d6c05843476) 337

PtgEWeek

[parse token definitions](#section_d6b91ccf04bf458dbe274a44eb2a7ec1) 337

PtgHectare

[parse token definitions](#section_6e8458cd0701450986110a116d14cfa9) 337

PtgNum

[parse token definitions](#section_7f64df2fdf884411b32281cedbae60c7) 338

PtgNumCM

[parse token definitions](#section_329125cb42144abe925c46f77abb9b93) 339

PtgNumDft

[parse token definitions](#section_c1c1c5f00830454fbb52f3169c43b3ca) 339

PtgNumF

[parse token definitions](#section_4099d68402ca4cf9865d18a93ff5e701) 340

PtgNumFI

[parse token definitions](#section_9ed637b4cfc141ffbbb5e04b5d9cebb4) 340

PtgNumI

[parse token definitions](#section_47224e0d0ad141fc9ec33a45cfc83822) 340

PtgNumKM

[parse token definitions](#section_a0b32592ed6b4b4c8729d2a94ce45397) 341

PtgNumM

[parse token definitions](#section_b0afad8bab4543a7975e371aecf81773) 341

PtgNumMI

[parse token definitions](#section_dc6dab5c773c48798bb6ab47950d3906) 342

PtgNumMM

[parse token definitions](#section_0ec7d8b3108c4eb0b1abff361b35f046) 342

PtgNumMultiDim

[parse token definitions](#section_cda376558fd845d5bb4fcd6578dad285) 343

PtgNumNM

[parse token definitions](#section_7dd9e771a61f4f47bc5074c0473e39da) 344

PtgNumPct

[parse token definitions](#section_2d9e5d598e0249d5a4bccbc8c406d3af) 344

PtgNumYards

[parse token definitions](#section_0541f25e2b9544e782cdd9d5263dff38) 345

PtgPageDft

[parse token definitions](#section_b444caac3e8b41bfaa556fd84dec0faf) 345

PtgPnt

[parse token definitions](#section_74bafdc175d543d4b029b547a63c26b8) 345

PtgString

[parse token definitions](#section_4d0ed5933e39412e841dea295324c20b) 346

PtgTDurDft

[parse token definitions](#section_88d43cf9dc69435f84e56fb7df3d786b) 347

PtgTypCD

[parse token definitions](#section_a4caa003fcf04e468b95d146a708f2e7) 347

PtgTypCi

[parse token definitions](#section_312a4de63b514f84837766c28a767143) 348

PtgTypDft

[parse token definitions](#section_3c1afeb46a104059866977b105fcc380) 348

PtgTypDi

[parse token definitions](#section_b9a9ab05727348d586c920a1807b7ef6) 349

PtgTypPi

[parse token definitions](#section_4bb1f53c92974bdfacc0806610d50e25) 349

PtgTypPP

[parse token definitions](#section_2e9fc0fa541c4cf9a4df431e3b94925d) 349

PtgTypPt

[parse token definitions](#section_236bed8990fb4120a91478962f363fc5) 350

PtgUnsWord

[parse token definitions](#section_fab3b1105fdd45f58f4a13025fbd7e62) 350

R

Rad

[function token definitions](#section_edee6b6d3fc44bc49201ffd338389cb5) 303

Rand

[function token definitions](#section_b3236297a6ac402d9d77ed5780d8f841) 303

[Recalculating shape properties](#section_3b9d352a42924aa9b5fec66141d0c5e1) 67

[formulas](#section_3861a838e4334529bb8f2ec92e61da89) 68

[unit number](#section_da66f46e884147ada137cf49e71157a7) 72

[Recordset](#section_5c84498371344d01bcee8e705c2efd1c) 66

Recordset refresh ([section 2.2.10.2](#section_5c84498371344d01bcee8e705c2efd1c) 66, [section 2.2.10.3](#section_37ec2f4bfaa84e82aa6cd9f9b364ddea) 67)

Ref

[function token definitions](#section_95a7fb9e6d4a46b1b0612adf1b44dd10) 303

[Reference token definitions](#section_070e1ba51db0433a8a1b08fdac8f6a26) 353

[References](#section_d320d731510b4ed2b261b828ceeabdf9) 26

[informative](#section_cf90bf07bbe144b4847f4ba5181c2e56) 28

[normative](#section_aea08658fdb7477c9d255c4522cc3362) 26

[Relationship to protocols and other structures](#section_5cf7bd0197724f9cb495d5f2a23cbd77) 28

Relationships

[file structure overview](#section_df1591d7f2814f2da496f29f14f4c0e4) 30

Rels

[part enumeration](#section_d80431dd8a6a45f7b74cf7599069edbe) 75

Replace

[function token definitions](#section_2e37faebb45f4bd4850d584fc0192c31) 304

RGB

[function token definitions](#section_ab2b0f45fe1e40d797b409c1183a34cb) 304

Right

[function token definitions](#section_ef9c1beb329c4467bab163afa1eb6a13) 305

Round

[function token definitions](#section_b80b8b0e1f3a402d9e53c458ceae7fe4) 306

S

Sat

[function token definitions](#section_fc9f0443bd7c457a8485056c42ccb976) 306

SatDiff

[function token definitions](#section_99bb58b130c6455da890afd1cb6b169e) 307

Second

[function token definitions](#section_efe145de6fa24bd1aeedc953c3f0f47b) 307

Sections

[ShapeSheet properties](#section_ae0d39d7aa9a4a5d9c51ea0feb34e00f) 146

Security

[field index](#section_d226d9b4b9f2421fa7203e78bf93b19c) 443

[implementer considerations](#section_570dc5e3600b4cadb164047f29f19897) 443

SetAtRef

[function token definitions](#section_579d4837d5644e2dab2411ff86953557) 308

SetAtRefEval

[function token definitions](#section_0920e3704cd04eb7906dca80c45e3cda) 308

SetAtRefExpr

[function token definitions](#section_d211689cfe4b477884b749fffb56c11c) 309

Shade

[function token definitions](#section_46c628269e814dc0a5d7b28ecf07e68f) 309

[Shape data](#section_89012d8abbf44af08c31a22e6eb61f2a) 37

[Shape hyperlinks](#section_908fb9630f114c19b100fedb1f768c67) 37

Shape identification ([section 2.2.3.1](#section_d646495b50bd45628892d81f417fcd9e) 34, [section 2.2.4.1](#section_f04b271b5aec48d1b156b632d0172fe0) 37, [section 2.2.5.1](#section_a3204fdb105f45e18b964abf89a0bfad) 38, [section 2.2.5.2](#section_c52c721c93c046fab204daf91f6ba8b4) 38)

Shape overview

[Structures](#section_2995871af1b144e69754989fb760ee18) 34

Shape selection ([section 2.2.3.2](#section_b690bcd44466465b938fc0cf7019eb39) 34, [section 2.2.3.4](#section_0a5a7ac088504e078c3cfeb4db36dcc7) 36)

ShapeSheet properties

[cells](#section_c31ebb48e79243088bc0ebcba281ce20) 160

[GeometryRowTypes](#section_1aa5e5becf37441abeef5f228cb9f9a3) 148

[sections](#section_ae0d39d7aa9a4a5d9c51ea0feb34e00f) 146

[Structures](#section_618d877ecefe4b07a0ab90ee61526bc4) 146

[triggers](#section_120f9695e3d34c5ebfeedf318590a573) 232

[UserRowNames](#section_f120b280d58f4d24ac3a925337fb8af3) 153

ShapeText

[function token definitions](#section_bc4adf2fca25453da1a7c1d0c478ccb4) 309

Shared XML parts and schema

[structures](#section_426dd464f76d4feb9a305e8118e01ebd) 74

Sheet overview

[Structures](#section_fd48786aaeee44ce84b100884dc31200) 37

Sign

[function token definitions](#section_a0ad71eea6294f32af8d4ada7cc43153) 310

Sin

[function token definitions](#section_b176ace2b48348a396e98aaee7de5fc4) 311

SinH

[function token definitions](#section_314e786b8a7b44978bbc94f93a320670) 311

Sqrt

[function token definitions](#section_3a41b128096f4e3c8345d8f13d931bf5) 312

StrSame

[function token definitions](#section_f03062a17a094b4a88867b875ca50806) 312

StrSameEx

[function token definitions](#section_8591a495a06a4d90a96606ef21224706) 313

Structures

[App XML part](#section_85e85f4058134276aed798b4d83506d0) 74

[comments overview](#section_60086b03a61f4e25ac5b943c02a66d8e) 65

[conceptual overview](#section_df6e4f8dd9c64d5e8b24c23e9c5e075e) 31

[Core XML part](#section_f7c9761b3ff14dd59319ebd0af457c99) 74

[data connectivity and refresh](#section_67d73a1ab5b148bf864c1d426a2df206) 65

[diagram update overview](#section_3b9d352a42924aa9b5fec66141d0c5e1) 67

[drawing page overview](#section_bb1af8e686064cd981b54cf0e8dedf1b) 31

[file structure](#section_30536debd7b24b72b59ce80b34b87c6e) 30

[format overview](#section_f63759284c0642dda31cbbab14930e93) 45

[formula evaluation and shape property recalculation](#section_aa03f278e801428da9e12febd62c893b) 234

[images overview](#section_c7915a6e1cd84633ad57261c2da081ae) 44

[markup compatibility schema](#section_c11c44262af449ba905a59117b667f21) 145

[masters overview](#section_04e031963af24a52bd32ef5d79b9efc5) 37

[overview](#section_1af3bf7bc2424b53a2ceef81083d5cb7) 30

[part enumeration](#section_33056f18c2584a29802603c58cbc8bca) 73

[parts](#section_1e2c12b7de5249978c5f82c8143921b7) 73

[recalculating shape properties](#section_3b9d352a42924aa9b5fec66141d0c5e1) 67

[Recordset](#section_5c84498371344d01bcee8e705c2efd1c) 66

Recordset refresh ([section 2.2.10.2](#section_5c84498371344d01bcee8e705c2efd1c) 66, [section 2.2.10.3](#section_37ec2f4bfaa84e82aa6cd9f9b364ddea) 67)

[shape data](#section_89012d8abbf44af08c31a22e6eb61f2a) 37

[shape hyperlinks](#section_908fb9630f114c19b100fedb1f768c67) 37

shape identification ([section 2.2.3.1](#section_d646495b50bd45628892d81f417fcd9e) 34, [section 2.2.4.1](#section_f04b271b5aec48d1b156b632d0172fe0) 37, [section 2.2.5.1](#section_a3204fdb105f45e18b964abf89a0bfad) 38, [section 2.2.5.2](#section_c52c721c93c046fab204daf91f6ba8b4) 38)

[shape overview](#section_2995871af1b144e69754989fb760ee18) 34

shape selection ([section 2.2.3.2](#section_b690bcd44466465b938fc0cf7019eb39) 34, [section 2.2.3.4](#section_0a5a7ac088504e078c3cfeb4db36dcc7) 36)

[ShapeSheet properties](#section_618d877ecefe4b07a0ab90ee61526bc4) 146

[shared XML parts and schema](#section_426dd464f76d4feb9a305e8118e01ebd) 74

[sheet overview](#section_fd48786aaeee44ce84b100884dc31200) 37

[text overview](#section_9aec7e652abe4518aaa7650e2fd6ceff) 62

[Visio parts](#section_96a4d5852ad644fd98b0767f130957d4) 75

[Visio XML schema](#section_29ffbc41defe4e30af7d2fe2826ca139) 79

[Web drawing overview](#section_a4989515773d4f3db1e264bb7275b4c9) 31

Sub

[function token definitions](#section_b8c448b764f6496f9bc9fdfa7590e8fd) 314

Subject

[function token definitions](#section_6f5c323509474428ae584ae48c4ba6f9) 315

Substitute

[function token definitions](#section_88777438adb14fb681cf54c405a515a0) 316

Sum

[function token definitions](#section_64e4f0d78f46483692dbec3de9ce5625) 317

T

Tan

[function token definitions](#section_3fb0e169d1124f49b74628f306f254d8) 317

TanH

[function token definitions](#section_6a13a9e654344117a672ee9c13678ed9) 318

Text overview

[Structures](#section_9aec7e652abe4518aaa7650e2fd6ceff) 62

TextHeight

[function token definitions](#section_f8a915fc26ea405db2e8303a73f4e275) 318

TextWidth

[function token definitions](#section_06b4900e0d4741aa86411d074cf83d31) 318

Theme

[function token definitions](#section_0bb5ca51f92a4e2a8ba6baceba0de879) 319

ThemeCBV

[function token definitions](#section_a6f0642830dd4461b05e8a5a5e86299d) 320

ThemeGuard

[function token definitions](#section_cf7a74ad1aea43779fe7d19c40d92d20) 321

ThemeProp

[function token definitions](#section_bd72b8b3fbf74463ad23cd8a5cc4acfd) 321

ThemeRestore

[function token definitions](#section_b81d964131a24f609b74eba256dd58e2) 322

ThemeVal

[function token definitions](#section_7f01db8e32d540df966f70cc1eeb9225) 322

Time

[function token definitions](#section_c8a0fece684b4a0f85c74a24cac4e813) 323

TimeValue

[function token definitions](#section_4df1ed74a2a64d54b67885cc0999d8fe) 324

Tint

[function token definitions](#section_697059c0410b4266a7313bb37c214a9e) 324

Title

[function token definitions](#section_4ff8fdd26365487bac287126cb630839) 325

Tone

[function token definitions](#section_7a421f2e1a0144fc86f95bc13c1e2705) 325

[Tracking changes](#section_cc905dd188964df99f397219c123dd41) 458

Triggers

[ShapeSheet properties](#section_120f9695e3d34c5ebfeedf318590a573) 232

Trim

[function token definitions](#section_4e6efb5d7de14c2285becf49e08f24f2) 325

Trunc

[function token definitions](#section_f2e18cbeb08a4043802b8919e44308c3) 327

typographicInternalUnitNumber

[custom internal unit types](#section_60ace6256a86466cbdd1011164b51cce) 361

U

UMinus

[function token definitions](#section_73239ed169d3486aa41085ee7143d47f) 327

UniChar

[function token definitions](#section_68f68010044340899f0560e7d21083b9) 328

[Unit number](#section_da66f46e884147ada137cf49e71157a7) 72

UPlus

[function token definitions](#section_385637b4c1d1479cbec5a3d4e630b145) 328

Upper

[function token definitions](#section_61481746becf46e385b7ed542cc68baa) 329

Use

[function token definitions](#section_baa06b88433f4e3093dac8a5b870e6b9) 329

UserRowNames

[ShapeSheet properties](#section_f120b280d58f4d24ac3a925337fb8af3) 153

V

vAngle

[custom token groupings](#section_e147725fd51545e5b83f6d8b09eba52b) 360

vAny

custom token groupings ([section 2.5.7.2](#section_4a97b6616cca49a7911670b57c9379d2) 360, [section 2.5.7.3](#section_f809c3999b1c4a688984764d079d153c) 360)

vBoolean

[custom input type definitions](#section_59248e6377544b5ab8f4a81bddfd8548) 357

vCalendar

[custom structures](#section_5d9ab6aa8a0646468771d3ff0e02ce96) 362

vColor

[custom input type definitions](#section_6953a98a0e984d3e9fe95484589a4695) 357

vCurrencyID

[custom structures](#section_afa85c0df5d947488108d3e5ac691720) 362

vDouble

[custom input type definitions](#section_ebd0ca9fd0f14fd5ab981200c1d026cc) 357

vDoubleEx

[custom input type definitions](#section_311bb3d6a0404a929b29e51641563a9c) 358

[Vendor-extensible fields](#section_eedb35c873624678b0ce25a081ae2851) 29

Version

[function token definitions](#section_f28ecd7b2b224f9ba7615d81198860e7) 329

[Versioning](#section_f26469aff9d74ec790c4aa34726ba9cc) 29

vFloat

[custom input type definitions](#section_91b47f1c6d1441fca31a1019497abaa7) 358

vFormatString

[custom structures](#section_ff39e94802a4435596e662456c2a775f) 371

Visio parts

[structures](#section_96a4d5852ad644fd98b0767f130957d4) 75

Visio XML schema

[structures](#section_29ffbc41defe4e30af7d2fe2826ca139) 79

vLanguageID

[custom structures](#section_b4a726f70bc142dcad410d3c6b95204f) 377

vNum

[custom token groupings](#section_40645a2108cc43a38b42bfb643bc76ed) 361

vNumAny

custom token groupings ([section 2.5.7.5](#section_25d21d600457404d90f42e5ae1c55682) 361, [section 2.5.7.6](#section_53aa08d870b047449a94608d01487e40) 361)

vSignedInt

[custom input type definitions](#section_3b7ec511bc8748a6b8ffeb03611b6e81) 358

vSignedLong

[custom input type definitions](#section_f28297223e2e4694b44a0bdcfc5acd44) 359

vString

[custom input type definitions](#section_706c71a7cb044b7e97b6f136c13acd60) 359

vUnitType

[custom token groupings](#section_46b90760f3eb4ae99c16c3ccac56f59f) 361

vUnsignedInt

[custom input type definitions](#section_2bbc84c7c544464296b688e7ecf5e249) 359

vUnsignedLong

[custom input type definitions](#section_7f9751418d77469298d44234d34095eb) 359

W

Web drawing overview

[Structures](#section_a4989515773d4f3db1e264bb7275b4c9) 31

WeekDay

[function token definitions](#section_19b79a97bbea4ed1b4f4cb4bce6dd275) 330

X

XML parts

[App](#section_85e85f4058134276aed798b4d83506d0) 74

[Core](#section_f7c9761b3ff14dd59319ebd0af457c99) 74

[XML schema](#section_5d9a5a4bc3d14d7b902f354f25fe66f4) 444

Y

Year

[function token definitions](#section_9b1a3d3d546a45a5a4774c4eb2aa875e) 330