[MS-ASCAL]:
ActiveSync Calendar Class Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
12/03/2008	1.0.0	Major	Initial Release.
04/10/2009	2.0.0	Major	Updated technical content and applicable product releases.
07/15/2009	3.0.0	Major	Revised and edited for technical content.
11/04/2009	4.0.0	Major	Updated and revised the technical content.
02/10/2010	5.0.0	Major	Updated and revised the technical content.
05/05/2010	6.0.0	Major	Updated and revised the technical content.

Table of Contents

1 Introduction

Mobile devices that communicate by using the ActiveSync protocol are able to exchange **calendar** data. The ActiveSync Calendar Class protocol specifies the ActiveSync protocol format for the interchange of calendar data.

1.1 Glossary

The following terms are defined in [MS-OXGLOS]:

appointment
attendee
calendar
class
collection
exception
ghosted
meeting
meeting request
organizer
property (1)
recipient (1)
recurrence pattern
recurring series
reminder
resource
synchronization
Wide Area Protocol (WAP) Binary XML (WBXML)
XML
XML schema

The following terms are specific to this document:

MAY, SHOULD, MUST, SHOULD NOT, MUST NOT: These terms (in all caps) are used as described in [RFC2119]. All statements of optional behavior use either MAY, SHOULD, or SHOULD NOT.

1.2 References

1.2.1 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. We will assist you in finding the relevant information. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

[MS-ASAIRS] Microsoft Corporation, "ActiveSync AirSyncBase Namespace Protocol Specification", December 2008.

[MS-ASCMD] Microsoft Corporation, "ActiveSync Command Reference Protocol Specification", December 2008.

[MS-ASDTYPE] Microsoft Corporation, "ActiveSync Data Types", December 2008.

[MS-ASWBXML] Microsoft Corporation, "ActiveSync WAP Binary XML (WBXML) Protocol Specification", December 2008.

[MS-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary", April 2008.

[RFC2119] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", RFC 2119, BCP 14, March 1997, http://www.ietf.org/rfc/rfc2119.txt

[RFC822] Crocker, D., "STANDARD FOR THE FORMAT OF ARPA INTERNET TEXT MESSAGES", RFC 822, August 1982, http://www.ietf.org/rfc/rfc0822.txt

[XML] Bray, T., Paoli, J., Sperberg-McQueen, C., Eds., et al., "Extensible Markup Language (XML) 1.0 (Fifth Edition)", W3C Recommendation, November 2008, http://www.w3.org/TR/REC-xml/

[XMLNS] Bray, T., Hollander, D., Layman, A., Eds., et al., "Namespaces in XML 1.0 (Third Edition)", December 2009, http://www.w3.org/TR/REC-xml-names/

1.2.2 Informative References

[MS-OXOCAL] Microsoft Corporation, "Appointment and Meeting Object Protocol Specification", April 2008.

1.3 Overview

The ActiveSync Calendar Class protocol specifies an **XML** representation of calendar data as used in various ActiveSync commands.

1.4 Relationship to Other Protocols

The ActiveSync Calendar Class protocol specifies an XML representation of calendar data that is used by the commands that are specified in [MS-ASCMD]. The protocol that controls the transmission of these commands between client and server is specified in [MS-ASHTTP].

Some types and elements in the calendar **class** support being **ghosted**. The use of ghosted properties is specified in [MS-ASCMD] section 2.2.1.19.1.12.

All data types in this document conform to the data type definitions that are specified in [MS-ASDTYPE]. Common **XML schema** elements that are used by other classes are specified in [MS-ASAIRS].

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

This protocol specifies a set of elements and complex types for use in communicating calendar data using the commands specified in [MS-ASCMD]. This set of elements and complex types is applicable when communicating calendar and **meeting request** information between a mobile device and a server. These elements and complex types are not applicable when sending other types of information supported by the ActiveSync protocol.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The Calendar class consists of a series of XML elements that are embedded inside a **collection** that is transmitted as specified in [MS-ASCMD]. The XML block that contains the Calendar class elements is transmitted in either the Request Body of a Request, or in the Response Body of a Response.

The types and elements of the Calendar class are defined in two namespaces: CAL, whose complex types and elements are specified in this document, and AirSyncBase, whose types and elements are specified in [MS-ASAIRS].

2.2 Message Syntax

The markup MUST be well-formed XML, as specified in [XML], and use the commands that are specified in [MS-ASCMD].

The XML markup that constitutes the Request Body or the Response Body is transmitted between client and server by using **Wide Area Protocol (WAP) Binary XML (WBXML)** [MS-ASWBXML].

The following is the XML schema definition for the Calendar class response in ActiveSync. Unless otherwise noted, the elements in this class are specified in the CAL namespace, using the mechanisms specified in [XMLNS]. The following represents the full set of data that can be returned by the **Sync** command. The relationship between these elements and other ActiveSync protocol commands is specified in section 3.1.5.

```
<?xml version="1.0" ?>
<xs:schema xmlns:tns="CAL:" attributeFormDefault="unqualified"
elementFormDefault="qualified"
targetNamespace="CAL:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:xs=http://www.w3.org/2001/XMLSchema xmlns:A="AirSyncBase:">
     <xs:import namespace="AirSyncBase:" />
     <xs:element name="Timezone" type="xs:timezone" />
     <xs:element name="AllDayEvent" type="xs:unsignedByte" />
     <xs:element name="Body" type="A:Body" />
     <xs:element name="BusyStatus" type="xs:unsignedByte">
          <xs:simpleType>
               <xs:restriction base="xs:unsignedByte">
                    <xs:minInclusive value="0"/>
                    <xs:maxInclusive value="5"/>
               </xs:restriction>
          </xs:simpleType>
     </xs:element>
     <xs:element name="OrganizerName" type="xs:string" />
     <xs:element name="OrganizerEmail" type="xs:string" />
     <xs:element name="DtStamp" type="xs:dateTime" />
     <xs:element name="EndTime" type="xs:dateTime" />
     <xs:element name="Location" type="xs:string" />
     <xs:element name="Reminder" type="xs:unsignedInt" />
     <xs:element name="Sensitivity" type="xs:unsignedByte">
          <xs:simpleType>
               <xs:restriction base="xs:unsignedByte">
                    <xs:minInclusive value="0"/>
                    <xs:maxInclusive value="3"/>
               </xs:restriction>
          </xs:simpleType>
     </xs:element>
```

```
        <xs:element name="Subject" type="xs:string" />
        <xs:element name="StartTime" type="xs:dateTime" />
        <xs:element name="UID" type="xs:string">
             <xs:simpleType>
                 <xs:restriction base="xs:string">
                      <xs:maxLength value="300"/>
                 </xs:restriction>
             </xs:simpleType>
        </xs:element>
        <xs:element minOccurs="0" name="MeetingStatus">
             <xs:simpleType>
                  <xs:restriction base="xs:unsignedByte">
                       <xs:enumeration value="1"/>
                       <xs:enumeration value="0"/>
                       <xs:enumeration value="3"/>
                       <xs:enumeration value="5"/>
                       <xs:enumeration value="7"/>
                       <xs:enumeration value="9"/>
                       <xs:enumeration value="11"/>
                       <xs:enumeration value="13"/>
                       <xs:enumeration value="15"/>
                  </xs:restriction>
             </xs:simpleType>
        </xs:element>

        <xs:element name="Attendees">
             <xs:complexType>
                  <xs:sequence minOccurs="0">
                       <xs:element name="Attendee" maxOccurs="unbounded">
                            <xs:complexType>
                                 <xs:all>
                                      <xs:element name="Email" type="xs:string" />
                                      <xs:element name="Name" type="xs:string" />
                                      <xs:element name="AttendeeStatus"
minOccurs="0">
                                           <xs:simpleType>
                                           <xs:restriction
base="xs:unsignedByte">
                                                <xs:enumeration value="0"/>
                                                <xs:enumeration value="2"/>
                                                <xs:enumeration value="3"/>
                                                <xs:enumeration value="4"/>
                                                <xs:enumeration value="5"/>
                                                </xs:restriction>
                                                </xs:simpleType>
                                      </xs:element>
                                      <xs:element name="AttendeeType" type="xs:unsignedByte">
                                           <xs:simpleType>
                                           <xs:restriction
base="xs:unsignedByte">
                                                <xs:enumeration value="1"/>
                                                <xs:enumeration value="2"/>
                                                <xs:enumeration value="3"/>
                                                </xs:restriction>
                                                </xs:simpleType>
                                      </xs:element>
                                 </xs:all>
                            </xs:complexType>
                       </xs:element>
```

```
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="Categories">
            <xs:complexType>
                <xs:sequence minOccurs="0">
                    <xs:element maxOccurs="300" name="Category" type="xs:string" />
                </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="Recurrence">
            <xs:complexType>
                <xs:all minOccurs="0">
                    <xs:sequence>
                        <xs:element minOccurs="1" name="Type">
                            <xs:simpleType>
                                <xs:restriction base="xs:unsignedByte">
                                    <xs:minInclusive value="0"/>
                                    <xs:maxInclusive value="6"/>
                                  </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                        <xs:element minOccurs="0" name="Occurrences"
  type="xs:unsignedShort" />
                        <xs:element name="Interval">
                            <xs:simpleType>
                                <xs:restriction base="xs:unsignedShort">
                                    <xs:minInclusive value="0"/>
                                    <xs:maxInclusive value="999"/>
                                </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                        <xs:element name="WeekOfMonth">
                            <xs:simpleType>
                                <xs:restriction base="xs:unsignedByte">
                                    <xs:minInclusive value="1"/>
                                    <xs:maxInclusive value="5"/>
                                </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                        <xs:element minOccurs="0" name="DayOfWeek">
                            <xs:simpleType>
                                <xs:restriction base="xs:unsignedShort">
                                    <xs:minInclusive value="0"/>
                                    <xs:maxInclusive value="127"/>
                                </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                        <xs:element minOccurs="0" name="MonthOfYear">
                            <xs:simpleType>
                                <xs:restriction base="xs:unsignedByte">
                                    <xs:minInclusive value="1"/>
                                    <xs:maxInclusive value="12"/>
                                </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                        <xs:element minOccurs="0" name="Until"
   type="xs:dateTime" />
                        <xs:element minOccurs="0" name="DayOfMonth">
```

```
                              <xs:simpleType>
                                   <xs:restriction base="xs:unsignedByte">
                                        <xs:minInclusive value="1"/>
                                        <xs:maxInclusive value="127"/>
                                   </xs:restriction>
                              </xs:simpleType>
                         </xs:element>
                         <xs:element minOccurs="0" name="CalendarType">
                              <xs:simpleType>
                                   <xs:restriction base="xs:unsignedByte">
                                        <xs:minInclusive value="0"/>
                                        <xs:maxInclusive value="23"/>
                                   </xs:restriction>
                              </xs:simpleType>
                         </xs:element>
                         <xs:element minOccurs="0" name="IsLeapMonth">
                              <xs:simpleType>
                                   <xs:restriction base="xs:unsignedByte">
                                        <xs:minInclusive value="0"/>
                                        <xs:maxInclusive value="1"/>
                                   </xs:restriction>
                              </xs:simpleType>
                         </xs:element>
                         <xs:element minOccurs="0" name="FirstDayOfWeek">
                              <xs:simpleType>
                                   <xs:restriction base="xs:unsignedByte">
                                        <xs:minInclusive value="0"/>
                                        <xs:maxInclusive value="6"/>
                                   </xs:restriction>
                               </xs:simpleType>
                          </xs:element>
                    </xs:sequence>
               </xs:all>
          </xs:complexType>
     </xs:element>
     <xs:element name="Exceptions">
          <xs:complexType>
               <xs:sequence minOccurs="0">
                    <xs:element name="Exception" maxOccurs="1000">

                         <xs:all>
                              <xs:element minOccurs="0" name="Deleted"
type="xs:unsignedByte" />
                              <xs:element name="ExceptionStartTime"
type="xs:dateTime" />
                              <xs:element minOccurs="0" name="Subject"
type="xs:string" />
                              <xs:element minOccurs="0" name="StartTime"
type="xs:dateTime" />
                              <xs:element minOccurs="0" name="EndTime"
type="xs:dateTime" />
                              <xs:element name="Body" type="A:Body" />
                              <xs:element minOccurs="0" name="Location"
type="xs:string" />
                              <xs:element minOccurs="0" name="Categories">
                                   <xs:complexType>
                                        <xs:sequence>
                                             <xs:element maxOccurs="300" name="Category"
type="xs:string" />
```

```
                                        </xs:sequence>
                                   </xs:complexType>
                              </xs:element>
                              <xs:element minOccurs="0" name="Sensitivity">
                                   <xs:simpleType>
                                        <xs:restriction base="xs:unsignedByte">
                                             <xs:minInclusive value="0"/>
                                             <xs:maxInclusive value="3"/>
                                        </xs:restriction>
                                   </xs:simpleType>
                              </xs:element>
                              <xs:element minOccurs="0" name="BusyStatus">
                                   <xs:simpleType>
                                        <xs:restriction base="xs:unsignedByte">
                                             <xs:minInclusive value="0"/>
                                             <xs:maxInclusive value="5"/>
                                        </xs:restriction>
                                   </xs:simpleType>
                              </xs:element>
                              <xs:element minOccurs="0"
 name="AllDayEvent" type="xs:unsignedByte" />
                              <xs:element minOccurs="0" name="Reminder"
type="xs:unsignedInt" />
                              <xs:element minOccurs="0" name="DtStamp"
type="xs:dateTime" />
                              <xs:element minOccurs="0" name="MeetingStatus">
                                   <xs:simpleType>
                                        <xs:restriction
base="xs:unsignedByte">
                                             <xs:enumeration value="1"/>
                                             <xs:enumeration value="0"/>
                                             <xs:enumeration value="3"/>
                                             <xs:enumeration value="5"/>
                                             <xs:enumeration value="7"/>
                                             <xs:enumeration value="9"/>
                                             <xs:enumeration value="11"/>
                                             <xs:enumeration value="13"/>
                                             <xs:enumeration value="15"/>
                                        </xs:restriction>
                                   </xs:simpleType>
                              </xs:element>
                              <xs:element minOccurs="0"
 name="AppointmentReplyTime" type="xs:dateTime" />
                              <xs:element minOccurs="0" name="ResponseType"
type="xs:unsignedInt" />

                         </xs:all>
                    </xs:element>
               </xs:sequence>
          </xs:complexType>
     </xs:element>
     <xs:element name="ResponseRequested" type="xs:boolean" />
     <xs:element name="AppointmentReplyTime" type="xs:dateTime" />
     <xs:element name="ResponseType" type="xs:unsignedInt" />
     <xs:element name="DisallowNewTimeProposal" type="xs:boolean" />
</xs:schema>
```

2.2.1 Complex Types

The following table summarizes the set of XML schema complex types defined by this specification.

Complex Type	Description
Body	The body text of the calendar item.
Attendees	A collection of the calendar item's **attendees**.
Attendees.Attendee	An attendee who is invited to the event.
Categories	A collection of categories for this calendar item.
Recurrence	The recurrence information for the calendar item.
Exceptions	A collection of the **exceptions** to this calendar item's recurrence.
Exceptions.Exception	An exception to this calendar item's recurrence.
Exceptions.Exception.Categories	The categories that are assigned to the recurring item exception.
Exceptions.Exception.Body	The body text of the recurring item exception.

2.2.1.1 Body

The <Body> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies the body text of the calendar item.

The <Body> type is specified in [MS-ASAIRS] section 2.2.1.3.

2.2.1.2 Attendees

The <Attendees> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies the collection of attendees for this calendar item.

The <Attendees> type can only have the following child element:

- <Attendees.Attendee> (section 2.2.1.3): This element is optional.

2.2.1.3 Attendees.Attendee

The <Attendees.Attendee> type is a **container** ([MS-ASDTYPE] section 2.8) type that specifies an attendee who is invited to the event.

The <Attendees.Attendee> type can only have the following child elements:

- <Attendees.Attendee.Email> (section 2.2.2.15): One instance of this element is required.
- <Attendees.Attendee.Name> (section 2.2.2.16): One instance of this element is required.
- <Attendees.Attendee.AttendeeStatus> (section 2.2.2.17): This element is optional.
- <Attendees.Attendee.AttendeeType> (section 2.2.2.18): This element is optional.

The <Attendees.Attendee> type can be ghosted. The use of ghosted **properties** is specified in [MS-ASCMD] section 2.2.1.19.1.12.

2.2.1.4 Categories

The <Categories> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies a collection of categories for this calendar item.

The <Categories> type can only have the following child element:

- <Categories.Category> (section 2.2.2.19): This type is optional.

The <Categories> type can be ghosted.

2.2.1.5 Recurrence

The <Recurrence> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies the recurrence information for this calendar item.

The <Recurrence> type can only have the following child elements:

- <Recurrence.Type> (section 2.2.2.20): One instance of this element is required.
- <Recurrence.Occurrences> (section 2.2.2.21): This element is optional.
- <Recurrence.Interval> (section 2.2.2.22): This element is optional.
- <Recurrence.WeekOfMonth> (section 2.2.2.23): This element is optional.
- <Recurrence.DayOfWeek> (section 2.2.2.24): This element is optional.
- <Recurrence.MonthOfYear> (section 2.2.2.25): This element is optional.
- <Recurrence.Until> (section 2.2.2.26): This element is optional.
- <Recurrence.DayOfMonth> (section 2.2.2.27): This element is optional.
- <Recurrence.CalendarType> (section 2.2.2.28): This element is optional in daily and yearly recurrences.
- <Recurrence.IsLeapMonth> (section 2.2.2.29): This element is optional.
- <Recurrence.FirstDayOfWeek> (section 2.2.2.30): This element is optional.

The following limitations apply to the <Recurrence> type:

- Multiple <Recurrence> types MUST NOT start on the same day.
- Multiple occurrences of the <Recurrence> type MUST NOT overlap. An exception that modifies the start date of an instance in the **recurring series** MUST occur on a date that is sometime after the end of the prior instance and before the start of the next instance in the recurring series. The same is true if the prior or next instance in the recurring series is defined as an exception by using the <Exceptions> type.

For more information about **recurrence patterns**, see [MS-OXOCAL] section 2.2.1.44.

The <Recurrence> type can be ghosted.

2.2.1.6 Exceptions

The <Exceptions> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies a collection of exceptions to the recurrence pattern of this calendar item.

The <Exceptions> type can only have the following child element:

- <Exceptions.Exception> (section 2.2.1.7): This type is optional.

The <Exceptions> type can be ghosted.

2.2.1.7 Exceptions.Exception

The <Exceptions.Exception> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies an exception to this calendar item's recurrence.

A command request or response has zero or more <Exceptions.Exception> types per <Exceptions> type.

The <Exceptions.Exception> type can only have the following child elements:

- <Exceptions.Exception.Deleted> (section 2.2.2.31): This element is optional.
- <Exceptions.Exception.ExceptionStartTime> (section 2.2.2.32): One instance of this element is required.
- <Exceptions.Exception.EndTime> (section 2.2.2.35): This element is optional.
- <Exceptions.Exception.Body> (section 2.2.1.9): This element is optional.
- <Exceptions.Exception.Location> (section 2.2.2.36): This element is optional.
- <Exceptions.Exception.Categories> (section 2.2.1.8): This element is optional.
- <Exceptions.Exception.Sensitivity> (section 2.2.2.38): This element is optional.
- <Exceptions.Exception.BusyStatus> (section 2.2.2.39): This element is optional.
- <Exceptions.Exception.AllDayEvent> (section 2.2.2.40): This element is optional.
- <Exceptions.Exception.Reminder> (section 2.2.2.41): This element is optional.
- <Exceptions.Exception.DtStamp> (section 2.2.2.42): This element is optional.
- <Exceptions.Exception.MeetingStatus> (section 2.2.2.43): This element is optional.
- <Exceptions.Exception.AppointmentReplyTime> (section 2.2.2.44): This element is optional in command responses. It is not included in command requests.
- <Exceptions.Exception.ResponseType> (section 2.2.2.45): This element is optional in command responses. It is not included in command requests.

2.2.1.8 Exceptions.Exception.Categories

The <Exceptions.Exception.Categories> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies the categories for this recurrence exception.

A command request or response has a maximum of one <Exceptions.Exception.Categories> type per <Exceptions.Exception> type.

The <Exceptions.Exception.Categories> type can only have the following element:

- <Exceptions.Exception.Categories.Category> (section 2.2.2.37): At least one instance of this element is required.

2.2.1.9 Exceptions.Exception.Body

The <Exceptions.Exception.Body> type is an optional **container** ([MS-ASDTYPE] section 2.8) type that specifies the body text of the exception item.

A command request or response has a maximum of one <Exceptions.Exception.Body> type per <Exceptions.Exception> type.

The <Body> type is defined within the AirSyncBase namespace, and is further specified in [MS-ASAIRS].

2.2.2 Elements

The following table summarizes the set of common XML schema elements that are defined or used by this specification. XML schema elements that are specific to a particular operation are defined with the operation.

Calendar class elements MUST NOT have child elements in either the command request or response.

Element	Description
Timezone	The time zone of the calendar item.
AllDayEvent	Specifies whether this calendar item runs for the entire day.
BusyStatus	Specifies whether the **recipient** is busy at the specified time.
OrganizerName	The name of the user who created this calendar item.
OrganizerEmail	The e-mail address of the user who created this calendar item.
DtStamp	The time at which this calendar item was created or modified.
EndTime	The end time of the calendar item.
Location	The place where the event specified by the calendar item occurs.
Reminder	The number of minutes before a calendar item's start time to display a **reminder** notice.
Sensitivity	The recommended privacy policy for this calendar item.
Subject	The summary of the calendar item.
StartTime	The start time of the calendar item.

Element	Description
UID	A unique, 300 digit hexadecimal ID generated by the client when the calendar item is created.
MeetingStatus	The status of the **meeting**.
Attendees.Attendee.Email	The e-mail address of the attendee.
Attendees.Attendee.Name	The name of the attendee.
Attendees.Attendee.AttendeeStatus	The attendee's acceptance status.
Attendees.Attendee.AttendeeType	Specifies whether the attendee is required, optional, or a **resource**.
Categories.Category	A category for this calendar item.
Recurrence.Type	The type of the recurrence.
Recurrence.Occurrences	The number of recurrences.
Recurrence.Interval	The interval between recurrences.
Recurrence.WeekOfMonth	The week of the month for this recurrence.
Recurrence.DayOfWeek	The day of the week for this recurrence.
Recurrence.MonthOfYear	The month of the year for this recurrence.
Recurrence.Until	The end date and time of this recurrence.
Recurrence.DayOfMonth	The day of the month of this recurrence.
Recurrence.CalendarType	The calendar system used by this recurrence.
Recurrence.IsLeapMonth	Specifies whether the recurrence of this **appointment** is to take place on the embolismic (leap) month.
Recurrence.FirstDayOfWeek	Specifies which day is considered the first day of the calendar week for this recurrence.
Exceptions.Exception.Deleted	Specifies whether this exception has been deleted.
Exceptions.Exception.ExceptionStartTime	The start time of the recurring meeting.
Exceptions.Exception.Subject	The subject of the calendar item exception.
Exceptions.Exception.StartTime	The start time of this exception.
Exceptions.Exception.EndTime	The end time of this exception.
Exceptions.Exception.Location	The location of this exception.
Exceptions.Exception.Categories.Category	A category assigned to this exception.
Exceptions.Exception.Sensitivity	The sensitivity level of this exception.
Exceptions.Exception.BusyStatus	The busy status of the meeting **organizer**.

Element	Description
Exceptions.Exception.AllDayEvent	Specifies whether this exception is an all-day event.
Exceptions.Exception.Reminder	The number of minutes before a calendar item's start time to display a reminder notice.
Exceptions.Exception.DtStamp	The date and time that this exception was created.
Exceptions.Exception.MeetingStatus	The status of this exception.
Exceptions.Exception.AppointmentReplyTime	The date and time the user responded to this exception request.
Exceptions.Exception.ResponseType	The type of response made by the user to this exception to a recurring meeting.
ResponseRequested	Specifies whether a response to this meeting request is required.
AppointmentReplyTime	The date and time that the user responded to the meeting request.
ResponseType	The type of response made by the user to a meeting request.
DisallowNewTimeProposal	Specifies whether recipients of this meeting request can propose a new time for the meeting.

2.2.2.1 Timezone

The <Timezone> element is an optional element that specifies the time zone of the calendar item.

The value of the <Timezone> element is a **TimeZone** type, as specified in [MS-ASDTYPE] section 2.6.

The <TimeZone> element can be ghosted.

2.2.2.2 AllDayEvent

The <AllDayEvent> element is an optional element that specifies whether the calendar item runs for the entire day.

The value of the <AllDayEvent> element MUST be one of those listed in the following table.

Value	Description
0	Is not an all day event.
1	Is an all day event.

An item marked as an all day event is understood to begin on midnight of the current day and to end on midnight of the next day.

The <AllDayEvent> element can be ghosted.

2.2.2.3 BusyStatus

The <BusyStatus> element is an optional element that specifies whether the recipient is busy at the time of the meeting.

The value of the <BusyStatus> element MUST be one of those listed in the following table.

Value	Description
0	Free
1	Tentative
2	Busy
3	Out of Office

The <BusyStatus> element can be ghosted.

2.2.2.4 OrganizerName

The <OrganizerName> element is an optional element that specifies the name of the user who created this calendar item.

The <OrganizerName> element can be ghosted.

2.2.2.5 OrganizerEmail

The <OrganizerEmail> element is an optional element that specifies the e-mail address of the user who created this calendar item.

The value of the <OrganizerEmail> element is a valid e-mail address format, as specified in [MS-ASDTYPE] section 2.5.

The <OrganizerEmail> element can be ghosted.

2.2.2.6 DtStamp

The <DtStamp> element is an optional element that specifies the time that this calendar item was created or modified.

The value of the <DtStamp> element is a valid **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

The <DtStamp> element can be ghosted.

2.2.2.7 EndTime

The <EndTime> element is a required element that specifies the end time of this calendar item.

The <EndTime> element MUST be present in the response even if the value of the <AllDayEvent> element is 1.

The value of the <EndTime> element is a **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

The <EndTime> element can be ghosted.

2.2.2.8 Location

The <Location> element is an optional element that specifies the place where the event specified by the calendar item occurs.

The <Location> element can be ghosted.

2.2.2.9 Reminder

The <Reminder> element is an optional element that specifies the number of minutes before a calendar item's start time to display a reminder notice.

The <Reminder> element can be ghosted.

2.2.2.10 Sensitivity

The <Sensitivity> element is an optional child element that specifies the recommended privacy policy for this calendar item.

The value of the <Sensitivity> element MUST be one of those listed in the following table.

Value	Description
0	Normal
1	Personal
2	Private
3	Confidential

The <Sensitivity> element can be ghosted.

2.2.2.11 Subject

The <Subject> element is a required element that specifies the subject of the calendar item.

The <Subject> element can be ghosted.

2.2.2.12 StartTime

The <StartTime> element is a required element that specifies the start time of the calendar item.

A **Sync** command request MUST contain one instance of the <StartTime> element. If this element is not included in a **Sync** command request, then the server MUST return a protocol status error 6. **Sync** command status errors are defined in [MS-ASCMD] section 2.2.1.19.2.17.

A **Sync** command response MUST contain one instance of the <StartTime> element.

The value of the <StartTime> element is a **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

The <StartTime> element can be ghosted.

2.2.2.13 UID

The <UID> element is an optional element that specifies a random hexadecimal ID generated by the client when the calendar item is created. The maximum length of this element is 300 characters.

The <UID> element can be ghosted.

2.2.2.14 MeetingStatus

The <MeetingStatus> element is an optional element that specifies the status of the meeting.

The value of the <MeetingStatus> element MUST be one of those listed in the following table.

Value	Description
0	Is not a meeting.
1	Is a meeting.
3	Meeting received.
5	Meeting is canceled.
7	Meeting is canceled and received.
9	Same as 1.
11	Same as 3.
13	Same as 5.
15	Same as 7.

The <MeetingStatus> element can be ghosted.

2.2.2.15 Attendees.Attendee.Email

The <Attendees.Attendee.Email> element is a required child element of the **Attendees.Attendee** type that specifies the e-mail address of an attendee.

A command request or response has a minimum of one <Attendees.Attendee.Email> element per **Attendees.Attendee** type.

A command request or response has a maximum of one <Attendees.Attendee.Email> element per **Attendees.Attendee** type.

The value of the <Attendees.Attendee.Email> element MAY be any arbitrary string. It is recommended that the string adhere to the **Email Address** type, as specified in [MS-ASDTYPE] section 2.5. A server MUST recognize when this value is not formatted as an **Email Address**, and MUST replace it with suitable placeholder text.

2.2.2.16 Attendees.Attendee.Name

The <Attendees.Attendee.Name> element is a required child element of the **Attendees.Attendee** type that specifies the name of an attendee.

A command request or response has a minimum of one <Attendees.Attendee.Name> element per **Attendees.Attendee** type.

A command request or response has a maximum of one <Attendees.Attendee.Name> element per **Attendees.Attendee** type.

2.2.2.17 Attendees.Attendee.AttendeeStatus

The <Attendees.Attendee.AttendeeStatus> element is an optional child element of the **Attendees.Attendee** type that specifies the attendee's acceptance status.

A **Sync** command request (section 3.1.5.3) has a maximum of one <Attendees.Attendee.AttendeeStatus> element per **Attendees.Attendee** element.

A command response has a maximum of one <Attendees.Attendee.AttendeeStatus> element per **Attendees.Attendee** element.

The value of the <Attendees.Attendee.AttendeeStatus> element MUST be one of those listed in the following table.

Value	Description
0	Response unknown
2	Tentative
3	Accept
4	Decline
5	Not responded

2.2.2.18 Attendees.Attendee.AttendeeType

The <Attendees.Attendee.AttendeeType> element is an optional child element of the **Attendees.Attendee** type that specifies whether this attendee is required, optional, or a resource.

A command response has a maximum of one <Attendees.Attendee.AttendeeType> element per **Attendees.Attendee** type.

The value of the <Attendees.Attendee.AttendeeType> element MUST be one of those specified in the following table.

Value	Description
1	Required
2	Optional
3	Resource

2.2.2.19 Categories.Category

The <Categories.Category> element is an optional element of the **Categories** type that specifies a **category** for this calendar item.

A command request SHOULD limit itself to no more than 300 <Categories.Category> elements per **Categories** type.

A command response SHOULD limit itself to no more than 300 <Categories.Category> elements per **Categories** type.

2.2.2.20 Recurrence.Type

The <Recurrence.Type> element is a required child element of the **Recurrence** type that specifies the type of the recurrence.

A command request or response has a minimum of one <Recurrence.Type> element per **Recurrence** element.

A command request or response has a maximum of one <Recurrence.Type> element per **Recurrence** element.

The value of the <Recurrence.Type> element MUST be one of those listed in the following table.

Value	Description
0	Recurs daily.
1	Recurs weekly.
2	Recurs monthly.
3	Recurs monthly on the nth day.
5	Recurs yearly.
6	Recurs yearly on the nth day.

2.2.2.21 Recurrence.Occurrences

The <Recurrence.Occurrences> element is an optional child element of the **Recurrence** type that specifies the number of occurrences before the series ends.

A command request or response has a maximum of one <Recurrence.Occurrences> element per **Recurrence** element.

The <Recurrence.Occurrences> element and the <Recurrence.Until> element (section 2.2.2.26) are mutually exclusive. It is recommended that only one of these elements be included in a <Recurrence> element (section 2.2.1.5) in a **Sync** command request. If both elements are included, then the server MUST respect the value of the <Recurrence.Occurrences> element and ignore the <Recurrence.Until> element.

The value of the <Recurrence.Occurrences> element is an integer. The maximum value is 999.

2.2.2.22 Recurrence.Interval

The <Recurrence.Interval> element is an optional child element of the **Recurrence** type (section 2.2.1.5) that specifies the interval between recurrences.

A command request or response has a maximum of one <Recurrence.Interval> element per **Recurrence** type (section 2.2.1.5).

A command request or response has a maximum of one <Recurrence.Interval> element per **Recurrence** type (section 2.2.1.5).

The value of the <Recurrence.Interval> element is an integer with a maximum value of 999.

2.2.2.23 Recurrence.WeekOfMonth

The <Recurrence.WeekOfMonth> element is a child element of the **Recurrence** type (section 2.2.1.5) that specifies the week of the month for the recurrence.

A command request or response has a minimum of one <Recurrence.WeekOfMonth> element per **Recurrence** element when the value of the <Recurrence.Type> element (section 2.2.2.20) is either 3 or 6.

A command request or response has a maximum of one <Recurrence.WeekOfMonth> element per **Recurrence** element.

The value of the <Recurrence.WeekOfMonth> element MUST be between 1 and 5. The value of 5 designates the last week of the month.

The <Recurrence.WeekOfMonth> element MUST only be included in requests or responses when the <Recurrence.Type> element (section 2.2.2.20) is set to a value of 3 or 6. When a client request is issued with the <Recurrence.WeekOfMonth> element in other instances, the server responds with a status error 6 (conversion error).

2.2.2.24 Recurrence.DayOfWeek

The <Recurrence.DayOfWeek> element is a child element of the **Recurrence** type that specifies the day of the week for the recurrence.

A command request or response has a maximum of one <Recurrence.DayOfWeek> element per **Recurrence** element.

The value of the <Recurrence.DayOfWeek> element MUST be either one of the values, or the sum of more than one of the values (in which case this task recurs on more than one day) listed in the following table. The value of the <Recurrence.DayOfWeek> element MUST NOT be greater than 127.

Value	Description
1	Sunday
2	Monday
4	Tuesday
8	Wednesday
16	Thursday
32	Friday
64	Saturday
127	The last day of the month. Used as a special value in monthly or yearly recurrences.

The <Recurrence.DayOfWeek> element MUST only be included in requests or responses when the <Recurrence.Type> element (section 2.2.2.20) is set to a value of 0, 1, 3, or 6. When a client request is issued with the <Recurrence.DayOfWeek> element in other instances, the server responds with a status error 6 (conversion error).

2.2.2.25 Recurrence.MonthOfYear

The <Recurrence.MonthofYear> element is a child element of the **Recurrence** type that specifies the month of the year for the recurrence.

A command request or response has a minimum of one <Recurrence.MonthofYear> element per **Recurrence** element if the value of the <Recurrence.Type> element is either 5 or 6.

A command request or response has a maximum of one <Recurrence.MonthofYear> element per **Recurrence** element.

The value of the <Recurrence.MonthofYear> element MUST be between 1 and 12.

The <Recurrence.MonthofYear> element MUST only be included in requests or responses when the <Recurrence.Type> element (section 2.2.2.20) is set to a value of 5 or 6. When a client request is issued with the <Recurrence.MonthofYear> element in other instances, the server responds with a status error 6 (conversion error).

2.2.2.26 Recurrence.Until

The <Recurrence.Until> element is an optional child element of the **Recurrence** type that specifies the end date and time of this recurrence.

A command request or response has a maximum of one <Recurrence.Until> element per **Recurrence** element.

The <Recurrence.Until> element and the <Recurrence.Occurrences> element (section 2.2.2.21) are mutually exclusive. It is recommended that only one of these elements be included in a <Recurrence> element (section 2.2.1.5) in a **Sync** command request. If both are included, then the server MUST respect the value of the <Recurrence.Occurrences> element and ignore the <Recurrence.Until> element.

The value of the <Recurrence.Until> element is a **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

2.2.2.27 Recurrence.DayOfMonth

The <Recurrence.DayOfMonth> element is a child element of the **Recurrence** type that specifies the day of the month for the recurrence.

A command request or response has a minimum of one <Recurrence.DayOfMonth> element per **Recurrence** type (section 2.2.2.20) when the value of the <Recurrence.Type> element is either 2 or 5.

A command request or response has a maximum of one <Recurrence.DayOfMonth> element per **Recurrence** element.

The value of the <Recurrence.DayOfMonth> element MUST be between 1 and 31.

The <Recurrence.DayOfMonth> element MUST only be included in requests or responses when the <Recurrence.Type> element (section 2.2.2.20) is set to a value of 2 or 5. When a client request is

issued with the <Recurrence.DayOfMonth> element in other instances, the server responds with a status error 6 (conversion error).

2.2.2.28 Recurrence.CalendarType

The <Recurrence.CalendarType> element<1> is a child element of the **Recurrence** type (section 2.2.1.5) that specifies the calendar system used by the recurrence.

A command request has a maximum of one <Recurrence.CalendarType> element per **Recurrence** type (section 2.2.1.5) when the <Recurrence.Type> element (section 2.2.2.20) is set to a value of 2, 3, 5, or 6. Otherwise, the server responds with a status error 6 (conversion error).

A command response has a minimum of one <Recurrence.CalendarType> element per **Recurrence** type (section 2.2.1.5) when the <Recurrence.Type> element (section 2.2.2.20) is set to a value of 2, 3, 5, or 6. Otherwise, this element is optional in command responses.

The value of the <Recurrence.CalendarType> element MUST be one of the values listed in the following table.

Value	Description
0	Default
1	Gregorian
2	Gregorian (United States)
3	Japanese Emperor Era
4	Taiwan
5	Korean Tangun Era
6	Hijri (Arabic Lunar)
7	Thai
8	Hebrew Lunar
9	Gregorian (Middle East French)
10	Gregorian (Arabic)
11	Gregorian (Transliterated English)
12	Gregorian (Transliterated French)
14	Japanese Lunar
15	Chinese Lunar
16	Saka Era. Reserved. MUST NOT be used. Status value 6 is returned by the server in a **Sync** response ([MS-ASCMD] section 2.2.1.19) when this value is used.
17	Chinese Lunar (Eto). Reserved. MUST NOT be used. Status value 6 is returned by the server in a **Sync** response ([MS-ASCMD] section 2.2.1.19) when this value is used.
18	Korean Lunar (Eto). Reserved. MUST NOT be used. Status value 6 is returned by the server in a **Sync** response ([MS-ASCMD] section 2.2.1.19) when this value is used.

Value	Description
19	Japanese Rokuyou Lunar. Reserved. MUST NOT be used. Status value 6 is returned by the server in a **Sync** response ([MS-ASCMD] section 2.2.1.19) when this value is used.
20	Korean Lunar
23	Um al-Qura. Reserved. MUST NOT be used. Status value 6 is returned by the server in a **Sync** response ([MS-ASCMD] section 2.2.1.19) when this value is used.

The server MAY return a value of 0 (Default) when a client specifies a value of 1 (Gregorian).

2.2.2.29 Recurrence.IsLeapMonth

The <Recurrence.IsLeapMonth> element<2> is an optional child element of the **Recurrence** type (section 2.2.2.20) that specifies whether the recurrence of this appointment takes place on the embolismic (leap) month.

A command request has a maximum of one <Recurrence.IsLeapMonth> element per **Recurrence** type (section 2.2.2.20).

A command response has a maximum of one <Recurrence.IsLeapMonth> element per **Recurrence** type (section 2.2.2.20).

This element only applies when the <Recurrence.CalendarType> element (section 2.2.2.28) specifies a calendar system that incorporates an embolismic (leap) month. Examples include lunisolar calendar systems such as Hebrew Lunar and Chinese Lunar. This element has no effect when specified in conjunction with the Gregorian calendar.

The value of the <Recurrence.IsLeapMonth> element MUST be one of the values in the following table.

Value	Description
0	False
1	True

The default value of the <Recurrence.IsLeapMonth> element is 0 (False).

2.2.2.30 Recurrence.FirstDayOfWeek

The <Recurrence.FirstDayOfWeek><3> element is an element that specifies which day is considered the first day of the calendar week for this recurrence.

A command request has a maximum of one <Recurrence.FirstDayOfWeek> element per **Recurrence** element (section 2.2.1.5).

A command response has a maximum of one <Recurrence.FirstDayOfWeek> element per **Recurrence** element. The server MUST return a <Recurrence.FirstDayOfWeek> element when the value of the <Recurrence.Type> element (section 2.2.2.20) is 1.

This element disambiguates recurrences across localities that define a different starting day for the calendar week. If this element is not included in the client request, the server SHOULD identify the first day of the week for this recurrence according to the preconfigured options of the user creating the calendar item.

The value of the <Recurrence.FirstDayOfWeek> element MUST be one of the following. If the client uses the **Sync** command to transmit a value not included in this table, the server MUST return protocol status error 6. **Sync** command status values are specified in [MS-ASCMD] section 2.2.1.19.2.17.

Value	Description
0	Sunday
1	Monday
2	Tuesday
3	Wednesday
4	Thursday
5	Friday
6	Saturday

2.2.2.31 Exceptions.Exception.Deleted

The <Exceptions.Exception.Deleted> element is an optional child element of the **Exceptions.Exception** element that specifies whether this exception to the calendar item has been deleted.

A command request or response has a maximum of one <Exceptions.Exception.Deleted> element per **Exceptions.Exception** element.

An exception will be deleted when the <Exceptions.Exception.Deleted> element is included as a child element with a value of 1.

2.2.2.32 Exceptions.Exception.ExceptionStartTime

The <Exceptions.Exception.ExceptionStartTime> element is a required child element of the **Exceptions.Exception** type that specifies the start time of the original recurring meeting.

A command request or response has a minimum of one <Exceptions.Exception.ExceptionStartTime> element per **Exceptions.Exception** element.

A command request or response has a maximum of one <Exceptions.Exception.ExceptionStartTime> element per **Exceptions.Exception** element.

The value of the <Exceptions.Exception.ExceptionStartTime> element is a **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

2.2.2.33 Exceptions.Exception.Subject

The <Exceptions.Exception.Subject> element is an optional element that specifies the subject of the calendar item exception.

If not specified, the value of the <Exceptions.Exception.Subject> element is assumed to be the same as the value of the <Subject> element (section 2.2.2.11).

The <Exceptions.Exception.Subject> element can be ghosted.

2.2.2.34 Exceptions.Exception.StartTime

The <Exceptions.Exception.StartTime> element is an optional element that specifies the start time of this exception.

If not specified, the value of the <Exceptions.Exception.StartTime> element is assumed to be the same as the value of the <StartTime> element (section 2.2.2.12).

The value of the <Exceptions.Exception.StartTime> element is a **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

The <Exceptions.Exception.StartTime> element can be ghosted.

2.2.2.35 Exceptions.Exception.EndTime

The <Exceptions.Exception.EndTime> element is an optional child element of the **Exceptions.Exception** type that specifies the end time of the exception.

A command request or response has a maximum of one <Exceptions.Exception.EndTime> element per **Exceptions.Exception** element.

If not specified, the value of the <Exceptions.Exception.EndTime> element is assumed to be the same as the value of the <EndTime> element (section 2.2.2.7).

The value of the <Exceptions.Exception.EndTime> element is a **date/time** type as specified in [MS-ASDTYPE] section 2.6.

2.2.2.36 Exceptions.Exception.Location

The <Exceptions.Exception.Location> element is an optional child element of the **Exceptions.Exception** type that specifies the location of the exception.

A command request or response has a maximum of one <Exceptions.Exception.Location> element per **Exceptions.Exception** type.

If not specified, the value of the <Exceptions.Exception.Location> element is assumed to be the same as the value of the <Location> element (section 2.2.2.8).

2.2.2.37 Exceptions.Exception.Categories.Category

The <Exceptions.Exception.Categories.Category> element is an optional child element of the **Exceptions.Exception.Categories** type that specifies a category to which the exception is assigned.

A command request is limited to no more than 300 <Exceptions.Exception.Categories.Category> elements per **Exceptions.Exception.Categories** type.

A command response is limited to no more than 300 <Exceptions.Exception.Categories.Category> elements per **Exceptions.Exception.Categories** type.

2.2.2.38 Exceptions.Exception.Sensitivity

The <Exceptions.Exception.Sensitivity> element is an optional child element of the **Exceptions.Exception** type that specifies the sensitivity level of this exception.

A command request or response has a maximum of one <Exceptions.Exception.Sensitivity> element per **Exceptions.Exception** type.

If not specified, the <Exceptions.Exception.Sensitivity> element is assumed to have the same value as the value of the <Sensitivity> element (section 2.2.2.10).

For a list of allowed values for the <Exceptions.Exception.Sensitivity> element, see the <Sensitivity> element (section 2.2.2.10).

2.2.2.39 Exceptions.Exception.BusyStatus

The <Exceptions.Exception.BusyStatus> element is an optional child element of the **Exceptions.Exception** type that specifies the busy status of the meeting organizer.

A command request or response has a maximum of one <Exceptions.Exception.BusyStatus> element per **Exceptions.Exception** element.

If not specified, the value of the <Exceptions.Exception.BusyStatus> element is assumed to be the same as the value of the <BusyStatus> element (section 2.2.2.3).

For a list of valid values of the <Exceptions.Exception.BusyStatus> element, see <BusyStatus> (section 2.2.2.3).

2.2.2.40 Exceptions.Exception.AllDayEvent

The <Exceptions.Exception.AllDayEvent> element is an optional child element of the **Exceptions.Exception** type that specifies whether this exception is an all-day event.

A command request or response has a maximum of one <Exceptions.Exception.AllDayEvent> element per **Exceptions.Exception** element.

If not specified, the value of the <Exceptions.Exception.AllDayEvent> element is assumed to be the same as the value of the <AllDayEvent> element (section 2.2.2.2).

For a list of valid values for the <Exceptions.Exception.AllDayEvent> element, see section 2.2.2.2.

2.2.2.41 Exceptions.Exception.Reminder

The <Exceptions.Exception.Reminder> element is an optional child element of the <Exceptions.Exception> type that specifies the number of minutes before a calendar item's start time to display a reminder notice.

A command request or response has a maximum of one <Exceptions.Exception.Reminder> element per **Exceptions.Exception** type.

If not specified, the value of the <Exceptions.Exception.Reminder> element is assumed to be the same as the value of the <Reminder> element (section 2.2.2.9).

2.2.2.42 Exceptions.Exception.DtStamp

The <Exceptions.Exception.DtStamp> element is an optional element that specifies the date and time that this exception was created.

A command request or response has a maximum of one <Exceptions.Exception.DtStamp> element per **Exceptions.Exception** element.

If not specified, the value of the <Exceptions.Exception.DtStamp> element is assumed to be the same as the value of the <DtStamp> element (section 2.2.2.6).

The value of the <Exceptions.Exception.DtStamp> element is a **date/time** type, as specified in [MS-ASDTYPE] section 2.6.

2.2.2.43 Exceptions.Exception.MeetingStatus

The <Exceptions.Exception.MeetingStatus> element<4> is an optional child element of the **Exceptions.Exception** type that specifies the status of this exception.

If not specified, the value of the <Exceptions.Exception.MeetingStatus> element is assumed to be the same as the value of the <MeetingStatus> element (section 2.2.2.14).

For a list of valid values for the <Exceptions.Exception.MeetingStatus> element, see section 2.2.2.14.

2.2.2.44 Exceptions.Exception.AppointmentReplyTime

The <Exceptions.Exception.AppointmentReplyTime><5> element is an optional element that specifies the date and time the user responded to the exception request.

A command request MUST NOT include the <Exceptions.Exception.AppointmentReplyTime> element.

A command response has a maximum of one <Exceptions.Exception.AppointmentReplyTime> element per response.

If the meeting request has been neither accepted nor tentatively accepted, the server MUST NOT include the <Exceptions.Exception.AppointmentReplyTime> element in a response.

2.2.2.45 Exceptions.Exception.ResponseType

The <Exceptions.Exception.ResponseType><6> element is an optional child element of the **Exceptions.Exception** type that specifies the type of response made by the user to an exception to a recurring meeting.

A command request MUST NOT include the <Exceptions.Exception.ResponseType> element.

A command response has a maximum of one <Exceptions.Exception.ResponseType> element per **Exceptions.Exception** type.

If not specified, the value of the <Exceptions.Exception.ResponseType> element is assumed to be the same as the value of the <ResponseType> element (section 2.2.2.48).

For a list of valid values for the <Exceptions.Exception.ResponseType> element, see section 2.2.2.48.

2.2.2.46 ResponseRequested

The <ResponseRequested><7> element is an optional element that specifies whether a response to the meeting request is required.

The value of the <ResponseRequested> element is a **Boolean** property, as specified in [MS-ASDTYPE] section 2.3.

2.2.2.47 AppointmentReplyTime

The <AppointmentReplyTime><8> element is an optional element that specifies the date and time that the current user responded to this meeting request.

A command request MUST NOT include the <AppointmentReplyTime> element.

A command response has a maximum of one <AppointmentReplyTime> element per response.

If no action has been taken on a meeting request, the server MUST NOT include the <AppointmentReplyTime> element in a response.

2.2.2.48 ResponseType

The <ResponseType><9> element is an optional element that specifies the type of response the user sent to a meeting request.

A command request MUST NOT include the <ResponseType> element.

A command response has a maximum of one <ResponseType> element per response.

The value of the <ResponseType> element MUST be one of the following:

Value	Description
0	None. The user's response to the meeting has not yet been received.
1	Organizer. The current user is the organizer of the meeting and, therefore, no reply is required.
2	Tentative. The user is unsure whether he or she will attend.
3	Accepted. The user has accepted the meeting request.
4	Declined. The user has declined the meeting request.
5	Not Responded. The user has not yet responded to the meeting request.

2.2.2.49 DisallowNewTimeProposal

The <DisallowNewTimeProposal><10> element is an optional element that specifies whether a meeting request recipient can propose a new time for the scheduled meeting.

A command request does not need to include the <DisallowNewTimeProposal> element. If it is not included in a command request, then the default value for this element is 0 (False).

A command response has one <DisallowNewTimeProposal> element per response.

The value of the <DisallowNewTimeProposal> element is a **Boolean** value, as specified in [MS-ASDTYPE] section 2.3.

3 Protocol Details

3.1 Client Details

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

Calendar class: a structured XML text block that adheres to the XML schema definition specified in section 2.2. It is included by the server as part of a full XML response to the client commands specified in section 3.1.4. Calendar class data is included in command requests sent to the server when calendar items need to be retrieved, searched, or synchronized. For more details about processing command requests, see section 3.1.4.

Command request: A WBXML formatted message that adheres to the command schemas specified in [MS-ASCMD].

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Synchronizing Calendar Data with a Server

A client initiates **synchronization** of calendar class data with the server by sending a **Sync** command request.

3.1.4.2 Searching a Server for a Calendar Item

A client searches for calendar class data by sending a **Search** command request to the server.

3.1.4.3 Requesting Details for One or More Calendar Items

Calendar class data for one or more individual calendar items is requested by the client using the **ItemOperations** command, which is a wrapper for the **Fetch** command. An **ItemOperations** command can contain multiple **Fetch** commands.

3.1.4.4 Omitting Ghosted Properties from a Sync Change Request

When a **Sync** operation ([MS-ASCMD] section 2.2.1.19) is performed with a nonzero <SyncKey> element value, the client uses the <Supported> element ([MS-ASCMD] section 2.2.1.19.1.11) of the **Sync** request to signify which properties are not ghosted. In subsequent **Sync** requests, the client includes only the set of <Supported> elements from the **Sync** request's <Change> element.

For more information on ghosted properties, see [MS-ASCMD] section 2.2.1.19.1.12.

3.1.4.5 Creating a New Meeting Request

When a user creates a meeting on the client, the client creates a meeting request within the user's calendar, and sends e-mail with the properly formatted meeting requests to the specified attendees. As the server receives the attendee responses, the organizer receives updates to the meeting request within the **Sync** command response. An example showing how a meeting request is included in a **Sync** command response is specified in [MS-ASCMD] section 4.27.3.

3.1.5 Message Processing Events and Sequencing Rules

The following section specifies how various elements of the calendar class are used in the context of specific ActiveSync commands. Command details are specified in [MS-ASCMD].

3.1.5.1 ItemOperations Command Request

A client uses the **ItemOperations** command to retrieve specific calendar items from the server using the **Fetch** element. An **ItemOperations** request can contain multiple **ItemOperations** elements.

Any of the complex types and elements for the calendar class can be included in an **ItemOperations** command request.

Calendar class complex types and elements MUST be transmitted as children of the **Schema** type ([MS-ASCMD] section 2.2.1.8.2.13).

The **ItemOperations** command is specified in [MS-ASCMD] section 2.2.1.8.

3.1.5.2 Search Command Request

A client uses the **Search** command to retrieve calendar class items from the server that match the criteria specified by the client.

The complex types and elements for the calendar class MUST NOT be included in a **Search** command request.

The **Search** command is specified in [MS-ASCMD] section 2.2.1.14.

3.1.5.3 Sync Command Request

A client uses the **Sync** command to synchronize its calendar class items for a specified user with the calendars that are currently stored by the server.

Any of the complex types and elements for the calendar class can be included in a **Sync** command request.

Calendar class complex types and elements can be transmitted as children of the <Supported> element ([MS-ASCMD] section 2.2.1.19.1.11) in order to support ghosted elements.

The **Sync** command is specified in [MS-ASCMD] section 2.2.1.19.

3.1.5.3.1 Indicating Deleted Elements in Exceptions

If an element in a recurring calendar item has been deleted in an <Exceptions.Exception> type, the client sends an empty tag for this element to remove the inherited value from the server. For example, if the <Exceptions.Exception.Location> element has been deleted for an exception, the client sends an empty <Exceptions.Exception.Location> tag in a **Sync** command request.

A client cannot remove an inherited element value from an exception if that property is ghosted.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

3.2.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

Calendar class: a structured XML text block that adheres to the XML schema definition specified in section 2.1. It is included by the server as part of a full XML response to the client commands specified in section 3.1.4. Calendar class data is included in command requests sent to the server when calendar items need to be retrieved, searched, or synchronized. For more details about processing command requests, see section 3.2.5.

Command response: A WBXML formatted message that adheres to the command schemas specified in [MS-ASCMD]. The server returns a calendar class XML block for every task that matches the criteria specified by the client command request.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

3.2.4.1 Synchronizing Calendar Data with a Server

A client initiates synchronization of calendar class data with the server by sending a **Sync** command request. The server responds with a **Sync** command response.

3.2.4.2 Searching a Server for a Calendar Item

A client searches for calendar class data by sending a **Search** command request to the server. The server responds with a **Search** command response.

3.2.4.3 Requesting Details for One or More Calendar Items

Calendar class data for one or more individual calendar items is requested by the client using the **ItemOperations** command request, which is a wrapper for the **Fetch** command. An

ItemOperations command request can contain multiple **Fetch** commands. The server responds with an **ItemOperations** command response.

3.2.4.4 Omitting Ghosted Properties from a Sync Change Request

When a **Sync** operation ([MS-ASCMD] section 2.2.1.19) is performed with a nonzero <SyncKey> element value, the client uses the <Supported> element of the **Sync** request to signify which properties are not ghosted. In subsequent **Sync** requests, the client includes only these elements in the **Sync** request's <Change> element ([MS-ASCMD] section 2.2.1.19.1.8). Ghosted elements are not sent to the server. Instead of deleting these excluded properties, the server preserves their previous value.

For more information on ghosted properties, see [MS-ASCMD] section 2.2.1.19.1.12.

3.2.5 Message Processing Events and Sequencing Rules

The following section specifies how various elements of the calendar class are used in the context of specific ActiveSync commands. Command details are specified in [MS-ASCMD].

3.2.5.1 ItemOperations Command Response

A client uses the **ItemOperations** command to retrieve specific calendar items from the server using the <Fetch> element. An **ItemOperations** request can contain multiple <Fetch> elements.

Any of the complex types and elements for the calendar class can be included in an **ItemOperations** command response. If a <Schema> element was included in the command request, then the complex types returned MUST be restricted to the complex types included in the command request's <Schema> element.

Calendar class complex types and elements MUST be returned as children of the properties type ([MS-ASCMD] section 2.2.1.8.3.10).

The **ItemOperations** command is specified in [MS-ASCMD] section 2.2.1.8.

3.2.5.2 Search Command Response

A client uses the **Search** command to retrieve calendar class items from the server that match the criteria specified by the client.

Any of the complex types and elements for the calendar class can be included in a **Search** command response.

Calendar class complex types and elements MUST be returned as children of the <Properties> type ([MS-ASCMD] section 2.2.1.14.2.2).

The **Search** command is specified in [MS-ASCMD] section 2.2.1.14.

3.2.5.3 Sync Command Response

A client uses the **Sync** command to synchronize its calendar class items for a specified user with the calendars that are currently stored by the server.

Any of the complex types for the calendar class can be included in a **Sync** command response.

Calendar class complex types and elements MUST be returned as children of the **ApplicationData** type ([MS-ASCMD] section 2.2.1.19.2.2).

If one or more properties of a recurring exception (that is, any child elements of the <Exceptions.Exception> type (section 2.2.1.7)) have been deleted, the server MUST transmit an empty element to indicate that this property is not inherited from the recurrence.

The **Sync** command is specified in [MS-ASCMD] section 2.2.1.19.

3.2.5.3.1 Removing Exceptions

If an **Exceptions** type is not specified in a **Sync** command response, then any exceptions previously defined are unchanged. If a particular <Exceptions.Exception> element is excluded from a **Sync** command response, then that particular exception remains unchanged.

3.2.5.3.2 Indicating Deleted Elements in Exceptions

If an element in a recurring calendar item has been deleted in an <Exceptions.Exception> type, the server MUST send an empty tag for this element. For example, if the <Exceptions.Exception.Location> element has been deleted for an **exception**, the server MUST send an empty <Exceptions.Exception.Location> tag to indicate this to the client.

3.2.6 Timer Events

None.

3.2.7 Other Events

None.

4 Protocol Examples

4.1 Synchronizing Calendar Data

The following example shows a client requesting calendar data synchronization with a server, and the server's response. The types and elements of the calendar class are included in the server response as children of the **ApplicationData** type, which is itself a child of either the **Add** or **Change** type.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>850479756</SyncKey>
      <CollectionId>1</CollectionId>
      <DeletesAsMoves/>
      <GetChanges/>
    </Collection>
  </Collections>
</Sync>
```

Response:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:" xmlns:A="CAL:" xmlns:B="AirSyncBase:">
  <Collections>
    <Collection>
      <SyncKey>664578668</SyncKey>
      <CollectionId>1</CollectionId>
      <Status>1</Status>
      <Commands>
        <Change>
          <ServerId>1:12</ServerId>
          <ApplicationData>
            <A:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIABEAG
EAeQBsAGkAZwBoAHQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMAAAACAAIAAAA
AAAAAxP///w==</A:Timezone>
            <A:DtStamp>20081002T231357Z</A:DtStamp>
            <A:StartTime>20081010T190000Z</A:StartTime>
            <A:Subject>Lunch meeting</A:Subject>

<A:UID>040000008200E00074C5B7101A82E008000000001027EAEDA124C901000000000000000010000000C58EA4
26C0CFF24AB3125200707153B1</A:UID>
            <A:OrganizerName>Rajesh M. Patel</A:OrganizerName>
            <A:OrganizerEmail>rajeshpatel@contoso.com</A:OrganizerEmail>
            <A:Location>Cafeteria A</A:Location>
            <A:EndTime>20081010T203000Z</A:EndTime>
            <B:Body>
              <B:Type>3</B:Type>
              <B:EstimatedDataSize>5669</B:EstimatedDataSize>
              <B:Truncated>1</B:Truncated>
            </B:Body>
```

```
            <A:Sensitivity>0</A:Sensitivity>
            <A:BusyStatus>3</A:BusyStatus>
            <A:AllDayEvent>0</A:AllDayEvent>
            <A:Reminder>15</A:Reminder>
            <A:MeetingStatus>0</A:MeetingStatus>
            <B:NativeBodyType>3</B:NativeBodyType>
          </ApplicationData>
        </Change>
        <Add>
          <ServerId>1:13</ServerId>
          <ApplicationData>

<A:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQAIABUAGkAbQBlAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMAAAACAAIAAAAAAAAAxP///w==</A:Timezone>
            <A:DtStamp>20081002T231335Z</A:DtStamp>
            <A:StartTime>20081013T170000Z</A:StartTime>
            <A:Subject>Dry Run of TechEd Presentation</A:Subject>

<A:UID>040000008200E00074C5B7101A82E008000000009003C9E1A924C901000000000000000010000000B3635D
1E1A2FF54FA575AB96797F532F</A:UID>
            <A:OrganizerName>Rajesh M. Patel</A:OrganizerName>
            <A:OrganizerEmail>rajeshpatel@contoso.com</A:OrganizerEmail>
            <A:Location>Conf Room 33-A/1298</A:Location>
            <A:EndTime>20081013T180000Z</A:EndTime>
            <B:Body>
              <B:Type>3</B:Type>
              <B:EstimatedDataSize>5669</B:EstimatedDataSize>
              <B:Truncated>1</B:Truncated>
            </B:Body>
            <A:Sensitivity>0</A:Sensitivity>
            <A:BusyStatus>2</A:BusyStatus>
            <A:AllDayEvent>0</A:AllDayEvent>
            <A:Reminder>15</A:Reminder>
            <A:MeetingStatus>0</A:MeetingStatus>
            <B:NativeBodyType>3</B:NativeBodyType>
          </ApplicationData>
        </Add>
        <Add>
          <ServerId>1:14</ServerId>
          <ApplicationData>

<A:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQAIABUAGkAbQBlAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMAAAACAAIAAAAAAAAAxP///w==</A:Timezone>
            <A:DtStamp>20081002T231639Z</A:DtStamp>
            <A:StartTime>20081013T190000Z</A:StartTime>
            <A:Subject>Team Meeting</A:Subject>

<A:UID>040000008200E00074C5B7101A82E008000000000060043DFCA924C901000000000000000001000000097F14E
F755AC454BA30EFA7B1B315E43</A:UID>
            <A:OrganizerName>Rajesh M. Patel</A:OrganizerName>
            <A:OrganizerEmail>rajeshpatel@contoso.com</A:OrganizerEmail>
            <A:Location>My office</A:Location>
            <A:EndTime>20081013T193000Z</A:EndTime>
            <A:Recurrence>
              <A:Type>3</A:Type>
              <A:Interval>1</A:Interval>
              <A:Until>20090713T190000Z</A:Until>
              <A:WeekOfMonth>2</A:WeekOfMonth>
```

```
              <A:DayOfWeek>2</A:DayOfWeek>
            </A:Recurrence>
            <B:Body>
              <B:Type>3</B:Type>
              <B:EstimatedDataSize>5769</B:EstimatedDataSize>
              <B:Truncated>1</B:Truncated>
            </B:Body>
            <A:Sensitivity>0</A:Sensitivity>
            <A:BusyStatus>2</A:BusyStatus>
            <A:AllDayEvent>0</A:AllDayEvent>
            <A:Reminder>15</A:Reminder>
            <A:MeetingStatus>0</A:MeetingStatus>
            <B:NativeBodyType>3</B:NativeBodyType>
          </ApplicationData>
        </Add>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

4.2 Synchronizing Recurring Appointments with Exceptions

The following appointment received from the server is a weekly recurring appointment with a single exception.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:A4="CAL:" xmlns:A17="AirSyncBase:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1958804782</SyncKey>
      <CollectionId>1</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
    </Collection>
  </Collections>
</Sync>
```

Response:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:A4="CAL:" xmlns:A17="AirSyncBase:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>573512161</SyncKey>
      <CollectionId>1</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>1:1</ServerId>
          <ApplicationData>
            <A4:TimeZone>4AEAACgARwBNAFQALQAwADgAOgAwADAAKQAgAFAAYQBjAGkAZgBpAGMAIABUAGkA
bQBlACAAKABVAFMAIAAmACAAQwAAAAsAAAABAAIAAAAAAAAAAAAAAACgARwBNAFQALQAwADgAOgAwA
```

```
DAAKQAgAFAAYQBjAGkAZgBpAGMAIABUAGkAbQBlACAAKABVAFMAIAAmACAAQwAAAAMAAAACAAIAAA
AAAAAAxP///w==</A4:TimeZone>
            <A4:DtStamp>20090415T165811Z</A4:DtStamp>
            <A4:StartTime>20090417T170000Z</A4:StartTime>
            <A4:Subject>Recurring appointment test</A4:Subject>
            <A4:UID>040000008200E00074C5B7101A82E00800000000B0CD1F52EBBDC9010000000000000000
00010000000B05E442FCB2CA443BF3D99B51A729FE6</A4:UID>
            <A4:OrganizerName>Rajesh M. Patel</A4:OrganizerName>
            <A4:OrganizerEmail>rajeshpatel@contoso.com </A4:OrganizerEmail>
            <A4:Location>My office</A4:Location>
            <A4:EndTime>20090417T180000Z</A4:EndTime>
            <A4:Recurrence>
              <A4:Type>1</A4:Type>
              <A4:Interval>1</A4:Interval>
              <A4:Occurrences>3</A4:Occurrences>
              <A4:DayOfWeek>32</A4:DayOfWeek>
            </A4:Recurrence>
            <A17:Body>
              <A17:Type>3</A17:Type>
              <A17:EstimatedDataSize>238</A17:EstimatedDataSize>
              <A17:Truncated>1</A17:Truncated>
            </A17:Body>
            <A4:Sensitivity>0</A4:Sensitivity>
            <A4:BusyStatus>2</A4:BusyStatus>
            <A4:AllDayEvent>0</A4:AllDayEvent>
            <A4:Reminder>15</A4:Reminder>
            <A4:Exceptions>
              <A4:Exception>
                <A4:Deleted>1</A4:Deleted>
                <A4:ExceptionStartTime>20090424T170000Z</A4:ExceptionStartTime>
              </A4:Exception>
            </A4:Exceptions>
            <A4:MeetingStatus>0</A4:MeetingStatus>
            <A17:NativeBodyType>3</A17:NativeBodyType>
            <A4:ResponseRequested>1</A4:ResponseRequested>
            <A4:ResponseType>1</A4:ResponseType>
          </ApplicationData>
        </Add>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

4.3 Setting Attendee Status from the Server

The following appointment has one attendee. Note that the organizer is not included in the attendee list. The organizer's information is specified by the <OrganizerEmail> and <OrganizerName> elements.

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:" xmlns:calendar="CAL:"
xmlns:airsyncbase="AirSyncBase:">
  <Collections>
    <Collection>
      <Class>Calendar</Class>
      <SyncKey>3</SyncKey>
      <CollectionId>1</CollectionId>
```

```
        <Status>1</Status>
        <Commands>
          <Add>
            <ServerId>1:2</ServerId>
            <ApplicationData>
              <calendar:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIAB
              TAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAA
              AAAAAAAAAAAAAAAAAAAAAAoAAAAFAAIAAAAAAAAAAA
              AAAFAAYQBjAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQA
              IABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
              QAAAABAAIAAAAAAAAAxP///w==</calendar:Timezone>
              <calendar:DtStamp>20051103T010509Z</calendar:DtStamp>
              <calendar:StartTime>20051103T230000Z</calendar:StartTime>
              <calendar:Subject>test meeting</calendar:Subject>
              <calendar:UID>040000008200E00074C5B7101A82E0080000000
              0B0FD68A212E0C501000000000000000001000000008C46B9A4960AF
              340871367CEC57B4543</calendar:UID>
              <calendar:Attendees>
                <calendar:Attendee>
                  <calendar:Email>rich@adventure-works.com
                  </calendar:Email>
                  <calendar:Name>Rich Haddock</calendar:Name>
                  <calendar:AttendeeStatus>0</calendar:AttendeeStatus>
                  <calendar:AteendeeType>1</calendar:AttendeeType>
                </calendar:Attendee>
              </calendar:Attendees>
              <calendar:OrganizerName>Administrator
              </calendar:OrganizerName>
              <calendar:OrganizerEmail>Administrator@adventure-
              works.com</calendar:OrganizerEmail>
              <calendar:Location>34/1123</calendar:Location>
              <calendar:EndTime>20051104T000000Z</calendar:EndTime>
              <airsyncbase:Body>
                <airsyncbase:Type>1</airsyncbase:Type>
                <airsyncbase:NonTruncatedSize>28
                </airsyncbase:NonTruncatedSize>
              </airsyncbase:Body>
              <calendar:Sensitivity>0</calendar:Sensitivity>
              <calendar:BusyStatus>2</calendar:BusyStatus>
              <calendar:AllDayEvent>0</calendar:AllDayEvent>
              <calendar:Reminder>15</calendar:Reminder>
              <calendar:MeetingStatus>1</calendar:MeetingStatus>
            </ApplicationData>
          </Add>
        </Commands>
      </Collection>
    </Collections>
  </Sync>
```

The following server response is a change for the same calendar item after the attendee has accepted (note the status change from 0 to 3).

```
  <?xml version="1.0" encoding="utf-8"?>
  <Sync xmlns="AirSync:" xmlns:calendar="CAL:"
  xmlns:airsyncbase="AirSyncBase:">
    <Collections>
```

```
<Collection>
  <Class>Calendar</Class>
  <SyncKey>4</SyncKey>
  <CollectionId>1</CollectionId>
  <Status>1</Status>
  <Commands>
    <Change>
      <ServerId>1:2</ServerId>
      <ApplicationData>
        <calendar:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAY
        QBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAoAAAAFAAIAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIA
        BEAGEAeQBsAGkAZwBoAHQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAA
        AAAAAAAAAAAAAAAQAAAABAAIAAAAAAAAAxP///w==
        </calendar:Timezone>
        <calendar:DtStamp>20051103T013759Z</calendar:DtStamp>
        <calendar:StartTime>20051103T230000Z</calendar:StartTime>
        <calendar:Subject>test meeting</calendar:Subject>
        <calendar:UID>040000008200E00074C5B7101A82E008000000000B
        0FD68A212E0C5010000000000000000100000008C46B9A4960AF
        340871367CEC57B4543</calendar:UID>
        <calendar:Attendees>
          <calendar:Attendee>
            <calendar:Email>rich@adventure-works.com
            </calendar:Email>
            <calendar:Name>Rich Haddock</calendar:Name>
            <calendar:Status>3</calendar:Status>
            <calendar:Type>1</calendar:Type>
          </calendar:Attendee>
        </calendar:Attendees>
        <calendar:OrganizerName>Administrator
        </calendar:OrganizerName>
        <calendar:OrganizerEmail>Administrator@adventure-
        works.com</calendar:OrganizerEmail>
        <calendar:Location>34/1123</calendar:Location>
        <calendar:EndTime>20051104T000000Z</calendar:EndTime>
        <airsyncbase:Body>
          <airsyncbase:Type>1</airsyncbase:Type>
          <airsyncbase:NonTruncatedSize>28
          </airsyncbase:NonTruncatedSize>
        </airsyncbase:Body>
        <calendar:Sensitivity>0</calendar:Sensitivity>
        <calendar:BusyStatus>2</calendar:BusyStatus>
        <calendar:AllDayEvent>0</calendar:AllDayEvent>
        <calendar:Reminder>15</calendar:Reminder>
        <calendar:MeetingStatus>1</calendar:MeetingStatus>
      </ApplicationData>
    </Change>
  </Commands>
</Collection>
</Collections>
</Sync>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

The information in this specification is applicable to the following product versions. References to product versions include released service packs.

- Microsoft® Exchange Server 2007
- Microsoft® Exchange Server 2010
- Microsoft® Exchange Server 2010 SP1 Beta

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified.

Unless otherwise specified, any statement of optional behavior in this specification 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 product does not follow the prescription.

<1> Section 2.2.2.28: The <Recurrence.CalendarType> element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<2> Section 2.2.2.29: The <Recurrence.IsLeapMonth> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

<3> Section 2.2.2.30: The <Recurrence.FirstDayOfWeek> element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<4> Section 2.2.2.43: The <Exceptions.Exception.MeetingStatus> element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<5> Section 2.2.2.44: The <Exceptions.Exception.AppointmentReplyTime> element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<6> Section 2.2.2.45: The <Exceptions.Exception.ResponseType> element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<7> Section 2.2.2.46: The <ResponseRequested> element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<8> Section 2.2.2.47: The <AppointmentReplyTime> element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<9> Section 2.2.2.48: The <ResponseType> element is not supported when the value of the MS-ASProtocolVersion element is set to 12.1.

<10> Section 2.2.2.49: The <DisallowNewTimeProposal> element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

7 Change Tracking

This section identifies changes made to [MS-ASCAL] protocol documentation between February 2010 and May 2010 releases. Changes are classed as major, minor, or editorial.

Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- A protocol is deprecated.
- The removal of a document from the documentation set.
- Changes made for template compliance.

Minor changes do not affect protocol interoperability or implementation. Examples are updates to fix technical accuracy or ambiguity at the sentence, paragraph, or table level.

Editorial changes apply to grammatical, formatting, and style issues.

No changes means that the document is identical to its last release.

Major and minor changes can be described further using the following revision types:

- New content added.
- Content update.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.
- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.

- Content removed for template compliance.
- Obsolete document removed.

Editorial changes always have the revision type "Editorially updated."

Some important terms used in revision type descriptions are defined as follows:

Protocol syntax refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.

Protocol revision refers to changes made to a protocol that affect the bits that are sent over the wire.

Changes are listed in the following table. If you need further information, please contact protocol@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
1.1 Glossary	54907 Added "meeting request" to the list of terms that are defined in [MS-OXGLOS].	N	New content added.
1.1 Glossary	55653 Added "calendar," "organizer," "property (1)," and "synchronization" to the list of terms that are defined in [MS-OXGLOS]. Specified definition (1) of the term "recipient." Updated the spelling of "Wide Area Protocol (WAP) Binary XML (WBXML)."	N	Content update.
1.3 Overview	Updated the section title.	N	Content updated for template compliance.
2.2 Message Syntax	54886 Added minOccurs and maxOccurs, enumerated values, and minInclusive and maxExclusive values for many elements.	Y	Content update.
2.2 Message Syntax	54695 Added XML Schema code for Recurrence.FirstDayOfWeek element.	Y	New content added.
2.2.1.2 Attendees	54375 Changed description of Attendees.Attendee from required to optional.	Y	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
2.2.1.5 Recurrence	54381 Changed description of Recurrence.Interval element from required to optional.	Y	Content update.
2.2.1.5 Recurrence	54695 Added Recurrence.FirstDayOfWeek element.	Y	New content added.
2.2.1.7 Exceptions.Exception	54441 Changed "has a minimum of one Exceptions.Exception type" to "has zero or more Exceptions.Exception types."	Y	Content update.
2.2.2 Elements	49392 Added Exceptions.Exception.Subject and Exceptions.Exception.StartTime to the element list.	Y	New content added.
2.2.2 Elements	54695 Added the Recurrence.FirstDayOfWeek element.	Y	New content added.
2.2.2.5 OrganizerEmail	54747 Changed "is ghosted" to "can be ghosted."	N	Content update.
2.2.2.12 StartTime	54962 Changed the description of this element from optional to required, and specified server behavior if a client omits this element from a Sync command request.	Y	Content update.
2.2.2.14 MeetingStatus	54408 Specified meaning of the values 9, 11, 13, and 15.	Y	New content added.
2.2.2.15 Attendees.Attendee.Email	54963 Clarified the format of the element's value.	Y	Content update.
2.2.2.17 Attendees.Attendee.AttendeeStatus	54400 Clarified that this element is allowed in a Sync command request.	Y	Content update.
2.2.2.21	54409 Clarified that this element takes	Y	Content

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
Recurrence.Occurrences	precedence over the Recurrence.Until element.		update.
2.2.2.22 Recurrence.Interval	54381 Changed description of element from required to optional.	Y	Content update.
2.2.2.23 Recurrence.WeekOfMonth	54451 Changed "when the value of the Recurrence.Interval element is either 3 or 6" to "when the value of the Recurrence.Type element is either 3 or 6."	N	Content update.
2.2.2.23 Recurrence.WeekOfMonth	54885 Removed description of element as optional, as it is required under specific conditions.	N	Content update.
2.2.2.24 Recurrence.DayOfWeek	54890 Removed description of this element as "optional," as it is required in certain circumstances.	N	Content removed.
2.2.2.24 Recurrence.DayOfWeek	54892 Removed line that described this element as being dependent on Recurrence.Interval, as it is only dependent on Recurrence.Type.	Y	Content removed.
2.2.2.25 Recurrence.MonthOfYear	54922 Changed "Recurrence.Interval" in the second paragraph to "Recurrence.Type".	Y	Content update.
2.2.2.25 Recurrence.MonthOfYear	54921 Removed the use of the word "optional" to describe the Recurrence.DayOfYear child element.	Y	Content update.
2.2.2.25 Recurrence.MonthOfYear	54900 Clarified that this element is valid in a command request when Recurrence.Type is set to either 5 or 6.	N	Content update.
2.2.2.26 Recurrence.Until	54409 Clarified that the Recurrence.Occurrences element takes precedence over this element.	Y	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
2.2.2.27 Recurrence.DayOfMonth	54911 Changed Recurrence.Interval in the second paragraph to Recurrence.Type.	Y	Content update.
2.2.2.27 Recurrence.DayOfMonth	54910 Removed the word "optional" in the paragraph that describes the Recurrence.DayOfMonth child element.	Y	Content update.
2.2.2.27 Recurrence.DayOfMonth	54912 Removed 3 or 6 as valid Recurrence.Type values for this element.	Y	Content removed.
2.2.2.28 Recurrence.CalendarType	54753 Specified that the server regards value 1 as equivalent to value 0.	N	New content added.
2.2.2.28 Recurrence.CalendarType	55043 Reworded product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
2.2.2.29 Recurrence.IsLeapMonth	55043 Reworded product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
2.2.2.29 Recurrence.IsLeapMonth	54430 Specified the conditions under which this element is used by clients and servers.	Y	New content added.
2.2.2.29 Recurrence.IsLeapMonth	Clarified the definition for this element.	N	Content update.
2.2.2.30 Recurrence.FirstDayOfWeek	54695 Added new section.	Y	New content added.
2.2.2.33 Exceptions.Exception.Subject	49392 Added new section.	Y	New content added.
2.2.2.34 Exceptions.Exception.StartTime	49392 Added new section.	Y	New content added.
2.2.2.35	55125 Specified that this element	Y	Content

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
Exceptions.Exception.EndTime	defaults to the value for the EndTime element recurrence.		update.
2.2.2.36 Exceptions.Exception.Location	55125 Specified that the value of this element defaults to the value for the Location element recurrence.	Y	Content update.
2.2.2.37 Exceptions.Exception.Categories.Category	55125 Changed description of element from required to optional.	Y	Content update.
2.2.2.38 Exceptions.Exception.Sensitivity	55125 Specified that this element defaults to the value for the Sensitivity element recurrence.	Y	Content update.
2.2.2.39 Exceptions.Exception.BusyStatus	55125 Specified that the value of this element defaults to the value for the BusyStatus element recurrence.	Y	Content update.
2.2.2.40 Exceptions.Exception.AllDayEvent	55125 Specified that this element defaults to the value for the AllDayEvent element recurrence.	Y	Content update.
2.2.2.41 Exceptions.Exception.Reminder	55125 Specified that the value of this element defaults to the value for the Reminder element recurrence.	Y	Content update.
2.2.2.42 Exceptions.Exception.DtStamp	55125 Specified that the value of this element defaults to the value for the DtStamp element recurrence.	Y	Content update.
2.2.2.43 Exceptions.Exception.MeetingStatus	54460 Added a product behavior note specifying the conditions under which this element is not supported.	Y	New content added.
2.2.2.43 Exceptions.Exception.MeetingStatus	55125 Specified that the value of this element defaults to the value for the MeetingStatus element recurrence.	Y	Content update.
2.2.2.44	55043	N	Content

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
Exceptions.Exception.AppointmentReplyTime	Reworded the product behavior note to clarify the conditions under which this element is not supported.		update.
2.2.2.45 Exceptions.Exception.ResponseType	55043 Reworded the product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
2.2.2.45 Exceptions.Exception.ResponseType	55125 Specified that the value for this element defaults to the value for the ResponseType element recurrence.	Y	Content update.
2.2.2.46 ResponseRequested	55043 Reworded the product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
2.2.2.47 AppointmentReplyTime	55043 Reworded the product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
2.2.2.48 ResponseType	55043 Reworded the product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
2.2.2.49 DisallowNewTimeProposal	55043 Reworded the product behavior note to clarify the conditions under which this element is not supported.	N	Content update.
3.1.4.4 Omitting Ghosted Properties from a Sync Change Request	54370 Changed the first paragraph to specify that the SyncKey element value in a Sync request must be nonzero to use the Supported element.	Y	Content update.
3.1.4.4 Omitting Ghosted Properties from a Sync Change Request	Removed a product behavior note specifying that the Supported element did not work in a previous release of Exchange 2007.	Y	Content removed.
3.1.4.5	54907	Y	New

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
Creating a New Meeting Request	Added new section.		content added.
3.1.5.1 ItemOperations Command Request	54780 Removed GUID from the first paragraph and replaced it with the name of the element.	N	Content update.
3.1.5.3 Sync Command Request	Removed a product behavior note specifying that the Supported element was not supported in a previous release of Exchange Server 2007.	Y	Content removed.
3.2.1 Abstract Data Model	49393 Removed normative language from this section.	N	Content update.
3.2.4.4 Omitting Ghosted Properties from a Sync Change Request	54370 Changed the first paragraph to specify that the SyncKey element value in a Sync request must be nonzero to use the Supported element.	Y	Content update.
3.2.4.4 Omitting Ghosted Properties from a Sync Change Request	Removed a product behavior note specifying that the Supported element did not work in a previous release of Exchange Server 2007.	Y	Content removed.

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