[MS-ASCAL]:
Exchange ActiveSync:
Calendar Class Protocol

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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.
08/04/2010	7.0	Major	Significantly changed the technical content.
11/03/2010	8.0	Major	Significantly changed the technical content.
03/18/2011	8.1	Minor	Clarified the meaning of the technical content.
08/05/2011	9.0	Major	Significantly changed the technical content.
10/07/2011	9.1	Minor	Clarified the meaning of the technical content.
01/20/2012	10.0	Major	Significantly changed the technical content.
04/27/2012	10.1	Minor	Clarified the meaning of the technical content.
07/16/2012	11.0	Major	Significantly changed the technical content.
10/08/2012	11.1	Minor	Clarified the meaning of the technical content.
02/11/2013	11.1	No change	No changes to the meaning, language, or formatting of the technical content.
07/26/2013	12.0	Major	Significantly changed the technical content.
11/18/2013	12.0	No change	No changes to the meaning, language, or formatting of the technical content.
02/10/2014	12.0	No change	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1   Introduction

The Exchange ActiveSync: Calendar Class Protocol enables the communication of calendar data between a mobile device and the server in the ActiveSync protocol.

Sections 1.8, 2, and 3 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in RFC 2119. Sections 1.5 and 1.9 are also normative but cannot contain those terms. All other sections and examples in this specification are informative.

1.1   Glossary

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

> **resource**
> **XML**
> **XML namespace**

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

> **ghosted**
> **Globally Routable User Agent URI (GRUU)**
> **meeting**
> **meeting request**
> **organizer**
> **recipient**
> **recurrence pattern**
> **recurring series**
> **reminder**
> **tentative**
> **Uniform Resource Locator (URL)**
> **user agent client (UAC)**
> **Wireless Application Protocol (WAP) Binary XML (WBXML)**
> **XML element**
> **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

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the documents, which are updated frequently. References to other documents include a publishing year when one is available.

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.

[MS-ASAIRS] Microsoft Corporation, "Exchange ActiveSync: AirSyncBase Namespace Protocol".

[MS-ASCMD] Microsoft Corporation, "Exchange ActiveSync: Command Reference Protocol".

[MS-ASDTYPE] Microsoft Corporation, "Exchange ActiveSync: Data Types".

[MS-ASHTTP] Microsoft Corporation, "Exchange ActiveSync: HTTP Protocol".

[MS-ASWBXML] Microsoft Corporation, "Exchange ActiveSync: WAP Binary XML (WBXML) Algorithm".

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

[MS-SIPRE] Microsoft Corporation, "Session Initiation Protocol (SIP) Routing Extensions".

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

[XML] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Fourth Edition)", W3C Recommendation, August 2006, http://www.w3.org/TR/2006/REC-xml-20060816/

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, http://www.w3.org/TR/2009/REC-xml-names-20091208/

[XMLSCHEMA1] Thompson, H.S., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[XMLSCHEMA2/2] Biron, P.V., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/

1.2.2   Informative References

[MS-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary".

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

[MS-OXPROTO] Microsoft Corporation, "Exchange Server Protocols System Overview".

1.3   Overview

This protocol specifies an **XML** representation of calendar data that is used for client and server communication as described in [MS-ASCMD]. The calendar data is included in protocol command requests when calendar data is sent from the client to the server, and is included in protocol command responses when calendar data is returned from the server to the client.

1.4   Relationship to Other Protocols

This protocol specifies an XML representation of calendar data that is used by the command requests and command responses that are described in [MS-ASCMD]. The protocol that controls the transmission of these commands between client and server is described in [MS-ASHTTP]. The **Wireless Application Protocol (WAP) Binary XML (WBXML)**, as described in [MS-ASWBXML], is used to transmit the XML markup that constitutes the request body and the response body.

Some elements in the **Calendar** class support being **ghosted**. The use of ghosted properties is described in [MS-ASCMD] section 2.2.3.164.

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

For conceptual background information and overviews of the relationships and interactions between this and other protocols, see [MS-OXPROTO].

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

This protocol describes a set of **XML elements** that are used to communicate calendar data when using the commands described in [MS-ASCMD]. This set of elements is applicable when communicating calendar and **meeting request** information between a mobile device and a server. These elements are not applicable when communicating other types of information that are 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

This protocol consists of a series of XML elements that are embedded inside of a command request or command response, as specified in [MS-ASCMD].

The XML markup that constitutes the request body or the response body that is transmitted between the client and the server uses Wireless Application Protocol (WAP) Binary XML (WBXML), as specified in [MS-ASWBXML].

2.2   Message Syntax

The XML schema for the Calendar namespace is described in section 6.

The markup that is used by this protocol MUST be well-formed XML, as specified in [XML].

2.2.1   Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [XMLNS]. Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

Prefix	Namespace URI	Reference
(none)	Calendar	
airsyncbase	AirSyncBase	[MS-ASAIRS]
airsync	AirSync	[MS-ASCMD] section 2.2.2.19
itemoperations	ItemOperations	[MS-ASCMD] section 2.2.2.8
search	Search	[MS-ASCMD] section 2.2.2.14
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]

2.2.2   Elements

Elements of the **Calendar** class are defined in two namespaces: **Calendar** and **AirSyncBase**. All **Calendar** class elements are specified in this document. However, elements defined in the **AirSyncBase** namespace are further specified in [MS-ASAIRS].

The following elements are top-level elements of the **Calendar** class:

- **Timezone** (section 2.2.2.42)

- **AllDayEvent** (section 2.2.2.1)

- **airsyncbase:Body** (section 2.2.2.7)

- **BusyStatus** (section 2.2.2.8)

- **OrganizerName** (section 2.2.2.34)

- **OrganizerEmail** (section 2.2.2.33)

- **DtStamp** (section 2.2.2.16)

- **EndTime** (section 2.2.2.18)

- **Location** (section 2.2.2.25)

- **Reminder** (section 2.2.2.36)

- **Sensitivity** (section 2.2.2.39)

- **Subject** (section 2.2.2.41)

- **StartTime** (section 2.2.2.40)

- **UID** (section 2.2.2.44)

- **MeetingStatus** (section 2.2.2.26)

- **Attendees** (section 2.2.2.4)

- **Categories** (section 2.2.2.10)

- **Recurrence** (section 2.2.2.35)

- **Exceptions** (section 2.2.2.20)

- **ResponseRequested** (section 2.2.2.37)

- **AppointmentReplyTime** (section 2.2.2.2)

- **ResponseType** (section 2.2.2.38)

- **DisallowNewTimeProposal** (section 2.2.2.15)

- **airsyncbase:NativeBodyType** (section 2.2.2.29)

- **OnlineMeetingConfLink** (section 2.2.2.31)

- **OnlineMeetingExternalLink** (section 2.2.2.32)

Except where otherwise specified in the following sections, each top-level element of the **Calendar** class is used in ActiveSync command requests and responses as follows:

- As an optional child element of the **itemoperations:Schema** element ([MS-ASCMD] section 2.2.3.145) in **ItemOperations** command requests ([MS-ASCMD] section 2.2.2.8)

- As an optional child element of the **itemoperations:Properties** element ([MS-ASCMD] section 2.2.3.128.1) in **ItemOperations** command responses ([MS-ASCMD] section 2.2.2.8)

- As an optional child element of the **search:Properties** element ([MS-ASCMD] section 2.2.3.128.2) in **Search** command responses ([MS-ASCMD] section 2.2.2.14)

- As an optional child element of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) in **Sync** command requests ([MS-ASCMD] section 2.2.2.19)

- As an optional child element of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) in **Sync** command responses ([MS-ASCMD] section 2.2.2.19)

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 specified further in sections 3.1.5.1, 3.1.5.2, 3.1.5.3, 3.2.5.1, 3.2.5.2, and 3.2.5.3.

Element name	Description
Timezone (section 2.2.2.42)	The time zone of the calendar item.
AllDayEvent (section 2.2.2.1)	Specifies whether the event represented by the calendar item or exception item runs for the entire day.
airsyncbase:Body (section 2.2.2.7)	The body text of the calendar item.
BusyStatus (section 2.2.2.8)	Specifies whether the **recipient (1)** is busy at the specified time.
OrganizerName (section 2.2.2.34)	The name of the user who created the calendar item.
OrganizerEmail (section 2.2.2.33)	The e-mail address of the user who created the calendar item.
DtStamp (section 2.2.2.16)	The date and time at which the calendar item was created or modified, or the date and time at which the exception item was created.
EndTime (section 2.2.2.18)	The end time of the calendar item or exception item.
Location (section 2.2.2.25)	The place where the event specified by the calendar item or exception item occurs.
Reminder (section 2.2.2.36)	The number of minutes before the calendar item's start time to display a **reminder** notice.
Sensitivity (section 2.2.2.39)	The recommended privacy policy for this calendar item or exception item.
Subject (section 2.2.2.41)	The subject of the calendar item or exception item.
StartTime (section 2.2.2.40)	The start time of the calendar item or exception item.
UID (section 2.2.2.44)	A unique, 300 digit hexadecimal ID generated by the client when the calendar item is created.
MeetingStatus (section 2.2.2.26)	Indicates whether the event is a meeting or an appointment, whether the event is canceled or active, and whether the user was the **organizer**.
Attendees (section 2.2.2.4)	The collection of attendees for the calendar item.
Attendee (section 2.2.2.3)	An attendee who is invited to the event.
Email (section 2.2.2.17)	The e-mail address of the attendee.
Name (section 2.2.2.28)	The name of the attendee.
AttendeeStatus (section 2.2.2.5)	The attendee's acceptance status.
AttendeeType (section 2.2.2.6)	Specifies whether the attendee is required, optional, or a **resource**.
Categories (section 2.2.2.10)	The collection of categories for the calendar item or exception item.

Element name	Description
Category (section 2.2.2.11)	A category that is assigned to the calendar item or exception item.
Recurrence (section 2.2.2.35)	The recurrence information for the calendar item.
Type (section 2.2.2.43)	The type of the recurrence.
Occurrences (section 2.2.2.30)	The number of recurrences.
Interval (section 2.2.2.23)	The interval between recurrences.
WeekOfMonth (section 2.2.2.46)	The week of the month for the recurrence.
DayOfWeek (section 2.2.2.13)	The day of the week for the recurrence.
MonthOfYear (section 2.2.2.27)	The month of the year for the recurrence.
Until (section 2.2.2.45)	The end date and time of the recurrence.
DayOfMonth (section 2.2.2.12)	The day of the month of the recurrence.
CalendarType (section 2.2.2.9)	The calendar system used by the recurrence.
IsLeapMonth (section 2.2.2.24)	Specifies whether the recurrence of the appointment is to take place on the embolismic (leap) month.
FirstDayOfWeek (section 2.2.2.22)	Specifies which day is considered the first day of the calendar week for the recurrence.
Exceptions (section 2.2.2.20)	A collection of exceptions to the **recurrence pattern** of the calendar item.
Exception (section 2.2.2.19)	An exception to the calendar item's recurrence pattern.
Deleted (section 2.2.2.14)	Specifies whether the exception has been deleted.
ExceptionStartTime (section 2.2.2.21)	The start time of the original recurring meeting.
ResponseRequested (section 2.2.2.37)	Specifies whether a response to the meeting request is required.
AppointmentReplyTime (section 2.2.2.2)	The date and time that the user responded to the meeting request or to the meeting exception request.
ResponseType (section 2.2.2.38)	The type of response made by the user to a meeting request.
DisallowNewTimeProposal (section 2.2.2.15)	Specifies whether recipients of the meeting request can propose a new time for the meeting.
airsyncbase:NativeBodyType (section 2.2.2.29)	Specifies how the body text of the calendar item is stored on the server.
OnlineMeetingConfLink (section 2.2.2.31)	A **Globally Routable User Agent URI (GRUU)** ([MS-SIPRE]) for an online meeting.
OnlineMeetingExternalLink (section 2.2.2.32)	A **Uniform Resource Locator (URL)** for an online meeting.

2.2.2.1   AllDayEvent

As a top-level element of the **Calendar** class, the **AllDayEvent** element is an optional element that specifies whether the event represented by the calendar item runs for the entire day. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **AllDayEvent** element specifies whether the event represented by the exception runs for the entire day. A command request or response has a maximum of one **AllDayEvent** child element per **Exception** element. If the **AllDayEvent** element is not specified as a child element of an **Exception** element, the value of the **AllDayEvent** element is assumed to be the same as the value of the top-level **AllDayEvent** element.

The **AllDayEvent** element is defined as an element in the **Calendar** namespace. The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.The value of the **AllDayEvent** element MUST be one of the values listed in the following table.

Value	Meaning
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.

If a request includes the **AllDayEvent** element as well as the **StartTime** element, as specified in section 2.2.2.40, and the **EndTime** element, as specified in section 2.2.2.18, and the **StartTime** and **EndTime** elements are not midnight to midnight values, then the server ignores the **AllDayEvent** element, does not include the **AllDayEvent** element in the response, and creates the event given the values of the **StartTime** element and the **EndTime** element.

2.2.2.2   AppointmentReplyTime

As a top-level element of the **Calendar** class, the **AppointmentReplyTime**<1> element is an optional element that specifies the date and time that the current user responded to the meeting request.

As an optional child element of the **Exception** element (section 2.2.2.19), the **AppointmentReplyTime** element specifies the date and time that the user responded to the meeting request exception.

The **AppointmentReplyTime** element is defined as an element in the **Calendar** namespace. The value of this element is a **string** data type, represented as a **Compact DateTime** ([MS-ASDTYPE] section 2.6.5).

A command request MUST NOT include the **AppointmentReplyTime** element, either as a top-level element or as a child element of the **Exception** element.

A command response has a maximum of one top-level **AppointmentReplyTime** element per response, and a maximum of one **AppointmentReplyTime** child element per **Exception** element.

The top-level **AppointmentReplyTime** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.3   Attendee

The **Attendee** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies an attendee who is invited to the event. It is a child element of the **Attendees** element (section 2.2.2.4) and is defined as an element in the **Calendar** namespace.

The **Attendee** element can have the following child elements:

- ▪ **Email** (section 2.2.2.17): One instance of this element is required.

- ▪ **Name** (section 2.2.2.28): One instance of this element is required.

- ▪ **AttendeeStatus** (section 2.2.2.5): This element is optional.

- ▪ **AttendeeType** (section 2.2.2.6): This element is optional.

2.2.2.4   Attendees

As a top-level element of the **Calendar** class, the **Attendees** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies the collection of attendees for the calendar item. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **Attendees** element specifies the collection of attendees for the calendar item exception.<2> A command request or response has a maximum of one **Attendees** child element per **Exception** element. If the **Attendees** element is not specified as a child element of the **Exception** element, the attendees for the calendar item exception are assumed to be the same as the value of the top-level **Attendees** element.

The **Attendees** element is defined as an element in the **Calendar** namespace.

The **Attendees** element can have the following child element:

- ▪ **Attendee** (section 2.2.2.3): This element is optional.

The top-level **Attendees** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.5   AttendeeStatus

The **AttendeeStatus** element is an optional child element of the **Attendee** element (section 2.2.2.3) that specifies the attendee's acceptance status. It is defined as an element in the **Calendar** namespace.

A command request has a maximum of one **AttendeeStatus** element per **Attendee** element.

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

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **AttendeeStatus** element MUST be one of the values listed in the following table.

Value	Meaning
0	Response unknown
2	Tentative

Value	Meaning
3	Accept
4	Decline
5	Not responded

2.2.2.6 AttendeeType

The **AttendeeType** element is an optional child element of the **Attendee** element (section 2.2.2.3) that specifies whether the attendee is required, optional, or a resource. It is defined as an element in the **Calendar** namespace.

A command response has a maximum of one **AttendeeType** element per **Attendee** element.

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **AttendeeType** element MUST be one of the values specified in the following table.

Value	Meaning
1	Required
2	Optional
3	Resource

2.2.2.7 Body

As a top-level element of the **Calendar** class, the **airsyncbase:Body** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies the body text of the calendar item. It is used in ActiveSync command requests and responses as specified in section 2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **airsyncbase:Body** element is a **container** ([MS-ASDTYPE] section 2.2) element that specifies the body text of the calendar item exception. A command request or response has a maximum of one **airsyncbase:Body** child element per **Exception** element.

The top-level **airsyncbase:Body** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

The **airsyncbase:Body** element is defined as an element in the **AirSyncBase** namespace and is further specified in [MS-ASAIRS] section 2.2.2.4.

2.2.2.8 BusyStatus

As a top-level element of the **Calendar** class, the **BusyStatus** element is an optional element that specifies whether the recipient is busy at the time of the meeting. It is used in ActiveSync command requests and responses as specified in section 2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **BusyStatus** element specifies the busy status of the meeting organizer. A command request or response has a maximum of one **BusyStatus** child element per **Exception** element. If the **BusyStatus** element is not specified as a child element of an **Exception** element, the value of the **BusyStatus** element is assumed to be the same as the value of the top-level **BusyStatus** element.

The **BusyStatus** element is defined as an element in the **Calendar** namespace. The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **BusyStatus** element MUST be one of the values listed in the following table.

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

2.2.2.9   CalendarType

The **CalendarType** element<3> is a child element of the **Recurrence** element (section 2.2.2.35) that specifies the calendar system used by the recurrence. It is defined as an element in the **Calendar** namespace.

A command request has a maximum of one **CalendarType** child element per **Recurrence** element when the **Type** element (section 2.2.2.43) value is 2, 3, 5, or 6.

A command response has a minimum of one **CalendarType** child element per **Recurrence** element when the **Type** element value is 2, 3, 5, or 6. Otherwise, this element is optional in command responses.

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **CalendarType** element MUST be one of the values listed in the following table.

Value	Meaning
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)

Value	Meaning
12	Gregorian (Transliterated French)
13	Reserved. MUST NOT be used.
14	Japanese Lunar
15	Chinese Lunar
16	Saka Era. Reserved. MUST NOT be used.
17	Chinese Lunar (Eto). Reserved. MUST NOT be used.
18	Korean Lunar (Eto). Reserved. MUST NOT be used.
19	Japanese Rokuyou Lunar. Reserved. MUST NOT be used.
20	Korean Lunar
21	Reserved. MUST NOT be used.
22	Reserved. MUST NOT be used.
23	Um al-Qura. Reserved. MUST NOT be used

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

2.2.2.10   Categories

As a top-level element of the **Calendar** class, the **Categories** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies a collection of categories assigned to the calendar item. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As a child element of the **Exception** element (section 2.2.2.19), the **Categories** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies the categories for the exception item. A command request or response has a maximum of one **Categories** child element per **Exception** element.

The **Categories** element is defined as an element in the **Calendar** namespace.

The **Categories** element can have the following child element:

- **Category** (section 2.2.2.11)

2.2.2.11   Category

The **Category** element is an optional child element of the **Categories** element (section 2.2.2.10) that specifies a category that is assigned to the calendar item or exception item. It is defined as an element in the **Calendar** namespace.

The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6.

A command request SHOULD include no more than 300 **Category** child elements per **Categories** element.

A command response SHOULD include no more than 300 **Category** child elements per **Categories** element.

2.2.2.12 DayOfMonth

The **DayOfMonth** element is a child element of the **Recurrence** element (section 2.2.2.35) that specifies the day of the month for the recurrence. It is defined as an element in the **Calendar** namespace.

A command request or response has a minimum of one **DayOfMonth** child element per **Recurrence** element when the value of the **Type** element (section 2.2.2.43) is either 2 or 5.

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

The value of the **DayOfMonth** element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7. The value of this element MUST be between 1 and 31.

The **DayOfMonth** element MUST be included in requests or responses when the **Type** element value is either 2 or 5. The **DayOfMonth** element MUST NOT be included in requests or responses when the **Type** element value is zero (0), 1, 3, or 6.

2.2.2.13 DayOfWeek

The **DayOfWeek** element is a child element of the **Recurrence** element (section 2.2.2.35) that specifies the day of the week for the recurrence. It is defined as an element in the **Calendar** namespace.

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

The value of this element is an **unsignedShort** data type, as specified in [XMLSCHEMA2/2].

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

Value	Meaning
1	Sunday
2	Monday
4	Tuesday
8	Wednesday
16	Thursday
32	Friday
62	Weekdays
64	Saturday
65	Weekend days

Value	Meaning
127	The last day of the month. Used as a special value in monthly or yearly recurrences.

The **DayOfWeek** element MUST only be included in requests or responses when the **Type** element (section 2.2.2.43) value is 0 (zero), 1, 3, or 6.

2.2.2.14   Deleted

The **Deleted** element is an optional child element of the **Exception** element (section 2.2.2.19) that specifies whether the exception to the calendar item has been deleted. It is defined as an element in the **Calendar** namespace.

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

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

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

2.2.2.15   DisallowNewTimeProposal

The **DisallowNewTimeProposal**<4> element is an optional element that specifies whether a meeting request recipient can propose a new time for the scheduled meeting. It is defined as an element in the **Calendar** namespace.

A command request is not required to include the **DisallowNewTimeProposal** element. If this element is not included in a command request, then the default value for this element is 0 (FALSE).

A command response contains one **DisallowNewTimeProposal** element per response.

The value of the **DisallowNewTimeProposal** element is a **boolean** data type, as specified in [MS-ASDTYPE] section 2.1.

The **DisallowNewTimeProposal** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.16   DtStamp

As a top-level element of the **Calendar** class, the **DtStamp** element is an optional element that specifies the date and time that the calendar item was created or modified. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **DtStamp** element specifies the date and time that this exception was created. A command request or response has a maximum of one **DtStamp** child element per **Exception** element. If the **DtStamp** element is not specified as a child element of an **Exception** element, the value of the **DtStamp** element is assumed to be the same as the value of the top-level **DtStamp** element (section 2.2.2.16).

The **DtStamp** element is defined as an element in the **Calendar** namespace. The value of this element is a **string** data type, represented as a **Compact DateTime** ([MS-ASDTYPE] section 2.6.5).

2.2.2.17 Email

The **Email** element is a required child element of the **Attendee** element (section 2.2.2.3) that specifies the e-mail address of an attendee. It is defined as an element in the **Calendar** namespace.

The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6.

A command request or response has only **Email** child element per **Attendee** element.

The value of the **Email** element MAY be any arbitrary string. It is recommended that the string format adhere to the format specified in [MS-ASDTYPE] section 2.6.2.

2.2.2.18 EndTime

As a top-level element of the **Calendar** class, the **EndTime** element is an optional element that specifies the end time of the calendar item. The client SHOULD include the **EndTime** element in a **Sync** command request ([MS-ASCMD] section 2.2.2.19). The **EndTime** element MUST be present in the response as a top-level element, even if the value of the **AllDayEvent** element (section 2.2.2.1) is 1.

For details about server behavior when a calendar event is received that is missing either the **StartTime** element (section 2.2.2.40), the **EndTime** element, or both, see section 3.2.4.4.

As an optional child element of the **Exception** element (section 2.2.2.19), the **EndTime** element specifies the end time of the calendar item exception. A command request or response has a maximum of one **EndTime** child element per **Exception** element. If the **EndTime** element is not specified as a child element of the **Exception** element, the value of the **EndTime** element for the calendar item exception is assumed to be the same as the value of the top-level **EndTime** element.

The **EndTime** element is defined as an element in the **Calendar** namespace. The value of this element is a **string** data type represented as a **Compact DateTime** ([MS-ASDTYPE] section 2.6.5).

2.2.2.19 Exception

The **Exception** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies an exception to the calendar item's recurrence pattern. It is a child element of the **Exceptions** element (section 2.2.2.20) and is defined as an element in the **Calendar** namespace.

A command request or response has between zero and 1000 **Exception** child elements per **Exceptions** element.

The **Exception** element can have the following child elements:

- **Deleted** (section 2.2.2.14): This element is optional.

- **ExceptionStartTime** (section 2.2.2.21): One instance of this element is required.

- **Subject** (section 2.2.2.41): This element is optional.

- **StartTime** (section 2.2.2.40): This element is optional.

- **EndTime** (section 2.2.2.18): This element is optional.

- **airsyncbase:Body** (section 2.2.2.7): This element is optional.

- **Location** (section 2.2.2.25): This element is optional.

- **Categories** (section 2.2.2.10): This element is optional.

- **Sensitivity** (section 2.2.2.39): This element is optional.

- **BusyStatus** (section 2.2.2.8): This element is optional.

- **AllDayEvent** (section 2.2.2.1): This element is optional.

- **Reminder** (section 2.2.2.36): This element is optional.

- **DtStamp** (section 2.2.2.16): This element is optional.

- **MeetingStatus** (section 2.2.2.26): This element is optional.

- **Attendees** (section 2.2.2.4): This element is optional.<5>

- **AppointmentReplyTime** (section 2.2.2.2): This element is optional in command responses. It is not included in command requests.<6>

- **ResponseType** (section 2.2.2.38): This element is optional in command responses. It is not included in command requests.<7>

- **OnlineMeetingConfLink** (section 2.2.2.31): This element is optional in command responses. It is not included in command requests.<8>

- **OnlineMeetingExternalLink** (section 2.2.2.32): This element is optional in command responses. It is not included in command requests.<9>

2.2.2.20   Exceptions

The **Exceptions** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies a collection of exceptions to the recurrence pattern of the calendar item. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The **Exceptions** element can have the following child element:

- **Exception** (section 2.2.2.19): This element is optional.

2.2.2.21   ExceptionStartTime

The **ExceptionStartTime** element is a required child element of the **Exception** element (section 2.2.2.19) that specifies the start time of the original recurring meeting. It is defined as an element in the **Calendar** namespace.

A command request or response has only one **ExceptionStartTime** child element per **Exception** element.

The value of the **ExceptionStartTime** element is a **string** data type, represented as a **Compact DateTime** ([MS-ASDTYPE] section 2.6.5).

2.2.2.22   FirstDayOfWeek

The **FirstDayOfWeek**<10> element is a child element of the **Recurrence** element (section 2.2.2.35) that specifies which day is considered the first day of the calendar week for the recurrence. It is defined as an element in the **Calendar** namespace.

A command request has a maximum of one **FirstDayOfWeek** child element per **Recurrence** element.

A command response has a maximum of one **FirstDayOfWeek** child element per **Recurrence** element.

This element disambiguates recurrences across localities that define a different starting day for the calendar week.

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **FirstDayOfWeek** element MUST be one of the values listed in the following table.

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

2.2.2.23   Interval

The **Interval** element is an optional child element of the **Recurrence** element (section 2.2.2.35) that specifies the interval between recurrences. It is defined as an element in the **Calendar** namespace.

A command request or response has a maximum of one **Interval** child element per **Recurrence** element.

The value of this element is an **unsignedShort** data type, as specified in [XMLSCHEMA2/2], with a minimum value of 0 and a maximum value of 999.

2.2.2.24   IsLeapMonth

The **IsLeapMonth** element<11> is an optional child element of the **Recurrence** element (section 2.2.2.35) that specifies whether the recurrence of the appointment takes place on the embolismic (leap) month. It is defined as an element in the **Calendar** namespace. A command request has a maximum of one **IsLeapMonth** child element per **Recurrence** element.

A command response has a maximum of one **IsLeapMonth** child element per **Recurrence** element.

This element only applies when the **CalendarType** element (section 2.2.2.9) 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 this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **IsLeapMonth** element MUST be one of the values listed in the following table.

Value	Meaning
0	False
1	True

The default value of the **IsLeapMonth** element is 0 (FALSE).

2.2.2.25 Location

As a top-level element of the **Calendar** class, the **Location** element is an optional element that specifies the place where the event specified by the calendar item occurs. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **Location** element specifies the place where the event specified by the calendar item exception occurs. A command request or response has a maximum of one **Location** child element per **Exception** element. If the **Location** element is not specified as a child element of the **Exception** element, the value of the **Location** element for the exception is assumed to be the same as the value of the top-level **Location** element.

The **Location** element is defined as an element in the **Calendar** namespace. The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6.

The top-level **Location** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.26 MeetingStatus

As a top-level element of the **Calendar** class, the **MeetingStatus** element is an optional element that specifies whether the event is a meeting or an appointment, whether the event is canceled or active, and whether the user was the organizer. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element, the **MeetingStatus** element<12> specifies the status of the calendar item exception. If the **MeetingStatus** element is not specified as a child element of an **Exception** element, the value of the **MeetingStatus** element for the exception is assumed to be the same as the value of the top-level **MeetingStatus** element.

The **MeetingStatus** element is defined as an element in the **Calendar** namespace. The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **MeetingStatus** element MUST be one of the values listed in the following table.

Value	Meaning
0	The event is an appointment, which has no attendees.
1	The event is a **meeting** and the user is the meeting organizer.
3	This event is a meeting, and the user is not the meeting organizer; the meeting was received from someone else.
5	The meeting has been canceled and the user was the meeting organizer.

Value	Meaning
7	The meeting has been canceled. The user was not the meeting organizer; the meeting was received from someone else.
9	Same as 1.
11	Same as 3.
13	Same as 5.
15	Same as 7.

The value of the **MeetingStatus** element is sent as an **unsignedByte** but SHOULD be parsed by the client based on the following bit flags.

0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
M	R	C	unused (variable)																												
...																															

M - Meeting (1 bit): If set, the event is a meeting. If not set, the event is an appointment.

R - Received (1 bit): If set, the user is not the meeting organizer and the meeting was received from someone else. If not set, the user is the meeting organizer.

C – Cancelled (1 bit): If set, the meeting has been canceled. If not set, the meeting is active.

unused (variable): These bits are not used. MUST be zero, and MUST be ignored.

The top-level **MeetingStatus** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.27   MonthOfYear

The **MonthOfYear** element is a child element of the **Recurrence** element (section 2.2.2.35) that specifies the month of the year for the recurrence. It is defined as an element in the **Calendar** namespace.

A command request or response has a minimum of one **MonthOfYear** child element per **Recurrence** element if the value of the **Type** element (section 2.2.2.43) is either 5 or 6.

A command request or response has a maximum of one **MonthOfYear** child element per **Recurrence** element.

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **MonthOfYear** element MUST be between 1 and 12.

The **MonthOfYear** element MUST be included in requests or responses when the **Type** element value is either 5 or 6. The **MonthOfYear** element MUST NOT be included in requests or responses when the **Type** element value is zero (0), 1, 3, or 6.

2.2.2.28 Name

The **Name** element is a required child element of the **Attendee** element (section 2.2.2.3) that specifies the name of an attendee. It is defined as an element in the **Calendar** namespace.

The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6.

A command request or response has only one **Name** child element per **Attendee** element.

2.2.2.29 NativeBodyType

The **airsyncbase:NativeBodyType** element is an optional element that specifies how the body text of the calendar item is stored on the server. It is defined as an element in the **AirSyncBase** namespace and used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

For details about the **airsyncbase:NativeBodyType** element, see [MS-ASAIRS] section 2.2.2.16.

2.2.2.30 Occurrences

The **Occurrences** element is an optional child element of the **Recurrence** element (section 2.2.2.35) that specifies the number of occurrences before the series ends. It is defined as an element in the **Calendar** namespace.

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

The **Occurrences** element and the **Until** element (section 2.2.2.45) are mutually exclusive. It is recommended that only one of these elements be included as a child element of a **Recurrence** element (section 2.2.2.35) in a **Sync** command request.

The value of the **Occurrences** element is an **unsignedShort**, as specified in [XMLSCHEMA2/2]. The maximum value is 999.

2.2.2.31 OnlineMeetingConfLink

The **OnlineMeetingConfLink** element<13> is an optional element that contains a GRUU for an online meeting. It is defined as an element in the **Calendar** namespace. The GRUU can be used by a **user agent client (UAC)** to connect to an online conference.

As an optional child element of the **Exception** element (section 2.2.2.19), the **OnlineMeetingConfLink** element specifies the GRUU for the exception. A command response has a maximum of one **OnlineMeetingConfLink** child element per **Exception** element.

A command request MUST NOT contain the **OnlineMeetingConfLink** element.

The value of the **OnlineMeetingConfLink** element is either a GRUU as specified in [MS-SIPRE], or an empty tag when included as a child of the **Exception** element.

The **OnlineMeetingConfLink** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.32   OnlineMeetingExternalLink

The **OnlineMeetingExternalLink** element<14> is an optional element that contains a URL for an online meeting. It is defined as an element in the **Calendar** namespace.

As an optional child element of the **Exception** element (section 2.2.2.19), the **OnlineMeetingExternalLink** element specifies the GRUU for the exception. A command response has a maximum of one **OnlineMeetingExternalLink** child element per **Exception** element.

A command request MUST NOT contain the **OnlineMeetingExternalLink** element.

The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6, or an empty tag when included as a child of the **Exception** element.

If a value for the **OnlineMeetingExternalLink** element exists, it SHOULD be a valid URL.

The **OnlineMeetingExternalLink** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.33   OrganizerEmail

The **OrganizerEmail** element is an optional element that specifies the e-mail address of the user who created the calendar item. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of the **OrganizerEmail** element is a **string** ([MS-ASDTYPE] section 2.6) in valid e-mail address format, as specified in [MS-ASDTYPE] section 2.6.2.

The **OrganizerEmail** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.34   OrganizerName

The **OrganizerName** element is an optional element that specifies the name of the user who created the calendar item. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6.

The **OrganizerName** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.35   Recurrence

The **Recurrence** element is an optional **container** ([MS-ASDTYPE] section 2.2) element that specifies the recurrence pattern for the calendar item. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The **Recurrence** element can have the following child elements:

- **Type** (section 2.2.2.43): One instance of this element is required.

- **Occurrences** (section 2.2.2.30): This element is optional.

- **Interval** (section 2.2.2.23): This element is optional.

- **WeekOfMonth** (section 2.2.2.46): This element is optional.

- **DayOfWeek** (section 2.2.2.13): This element is optional.

- **MonthOfYear** (section 2.2.2.27): This element is optional.

- **Until** (section 2.2.2.45): This element is optional.

- **DayOfMonth** (section 2.2.2.12): This element is optional.

- **CalendarType** (section 2.2.2.9): This element is optional in daily and yearly recurrences.

- **IsLeapMonth** (section 2.2.2.24): This element is optional.

- **FirstDayOfWeek** (section 2.2.2.22): This element is optional.

The following limitations apply to the **Recurrence** element:

- Multiple occurrences of the **Recurrence** element, when specified on a single event, MUST NOT start on the same day.

- Multiple occurrences of the **Recurrence** element, when specified on a single event, 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** element.

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

2.2.2.35.1 Recurrence Patterns

Recurrence patterns for recurring calendar items are represented within the **Recurrence** element (section 2.2.2.35). The **Type** element (section 2.2.2.43), which is a child of the **Recurrence** element, specifies the unit of the occurrence (daily, weekly, monthly, or yearly); additional child elements of the **Recurrence** element, such as **Occurrences** (section 2.2.2.30) and **DayOfWeek** (section 2.2.2.13), are also used to fully define the recurrence pattern over time.

The following lists specify whether elements are required or optional for each value of the **Type** element. It also describes the relationship between the elements, and their meaning for different values of the **Type** element.

For all values of the **Type** element, the following elements are optional:

- **Occurrences** (section 2.2.2.30) or **Until** (section 2.2.2.45). Either the **Occurrences** or **Until** element is required to specify an end date. If neither value is set, the event has no end date.

- **IsLeapMonth** (section 2.2.2.24).

- **FirstDayOfWeek** (section 2.2.2.22).

When the **Type** element is set to zero (0), meaning a daily occurrence, the following elements are supported:

- **Interval** (section 2.2.2.23). Optional.

- **DayOfWeek**. Optional. If the **DayOfWeek** element is not set, the recurrence is a daily occurrence, occurring *n* days apart, where *n* is the value of the **Interval** element. If the **DayOfWeek** element is set, the recurrence is a weekly occurrence, occurring on the day

specified by the **DayOfWeek** element, and the value of the **Interval** element indicates the number of weeks between occurrences.

When the **Type** element is set to 1, meaning a weekly occurrence, the following elements are supported:

- **Interval**. Optional.

- **DayOfWeek**. Required.

When the **Type** element is set to 2, meaning a monthly occurrence, the following elements are supported:

- **Interval**. Optional.

- **DayOfMonth** (section 2.2.2.12). Required.

- **CalendarType** (section 2.2.2.9). Optional.

When the **Type** element is set to 3, meaning a monthly occurrence on the *n*th day, the following elements are supported:

- **Interval**. Optional.

- **WeekOfMonth** (section 2.2.2.46). Required. If the **DayOfWeek** element is set to 127, the **WeekOfMonth** element indicates the day of the month that the event occurs. If the **DayOfWeek** element is set to 62, to specify weekdays, the **WeekOfMonth** element indicates the *n*th weekday of the month, where *n* is the value of **WeekOfMonth** element. If the **DayOfWeek** element is set to 65, to specify weekends, the **WeekOfMonth** element indicates the *n*th weekend day of the month, where *n* is the value of **WeekOfMonth** element.

- **DayOfWeek**. Required.

- **CalendarType**. Optional.

When the **Type** element is set to 5, meaning a yearly occurrence, the following elements are supported:

- **Interval**. Optional.

- **DayOfMonth**. Required.

- **MonthOfYear** (section 2.2.2.27). Required.

- **CalendarType**. Optional.

When the **Type** element is set to 6, meaning a yearly occurrence on the *n*th day, the following elements are supported:

- **Interval**. Optional.

- **WeekOfMonth**. Required.

- **DayOfWeek**. Optional.

- **MonthOfYear**. Required

- **CalendarType**. Optional.

For examples of common recurrence patterns, see section 4.4.

Items that equate to the same sequence on the calendar can be represented by different recurrence patterns, as described in section 4.5.

2.2.2.36   Reminder

As a top-level element of the **Calendar** class, the **Reminder** element is an optional element that specifies the number of minutes before the calendar item's start time to display a reminder notice. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **Reminder** element specifies the number of minutes before a calendar item exception's start time to display a reminder notice. A command request or response has a maximum of one **Reminder** child element per **Exception** element. If the **Reminder** element is not specified as a child element of an **Exception** element, the value of the **Reminder** element for the exception is assumed to be the same as the value of the top-level **Reminder** element.

The **Reminder** element is defined as an element in the **Calendar** namespace. The value of this element is an **unsignedInt** data type, as specified in [XMLSCHEMA2/2], or an **EmptyTag** data type, which contains no value.<15>

2.2.2.37   ResponseRequested

The **ResponseRequested**<16> element is an optional element that specifies whether a response to the meeting request is required. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of the **ResponseRequested** element is a **boolean** data type, as specified in [MS-ASDTYPE] section 2.1.

The **ResponseRequested** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.38   ResponseType

As a top-level element of the **Calendar** class, the **ResponseType**<17> element is an optional element that specifies the type of response made by the user to a meeting request.

As an optional child element of the **Exception** element (section 2.2.2.19), the **ResponseType**<18> element specifies the type of response made by the user to a recurring meeting exception. If the **ResponseType** element is not specified as a child element of an **Exception** element, the value of the **ResponseType** element for the exception is assumed to be the same as the value of the top-level **ResponseType** element.

A command request MUST NOT include the **ResponseType** element, either as a top-level element or as a child element of the **Exception** element.

A command response has a maximum of one top-level **ResponseType** element per response, and a maximum of one **ResponseType** child element per **Exception** element.

The **ResponseType** element is defined as an element in the **Calendar** namespace. The value of this element is an **unsignedInt** data type, as specified in [XMLSCHEMA2/2].

The value of the **ResponseType** element MUST be one of the values listed in the following table.

Value	Meaning
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.

The top-level **ResponseType** element can be ghosted. For details about the use of ghosted properties, see [MS-ASCMD] section 2.2.3.164.

2.2.2.39   Sensitivity

As a top-level element of the **Calendar** class, the **Sensitivity** element is an optional child element that specifies the recommended privacy policy for the calendar item. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **Sensitivity** element specifies the recommended privacy policy for the calendar item exception. A command request or response has a maximum of one **Sensitivity** child element per **Exception** element. If the **Sensitivity** element is not specified as a child element of an **Exception** element, the **Sensitivity** element for the exception is assumed to have the same value as the value of the top-level **Sensitivity** element.

The **Sensitivity** element is defined as an element in the **Calendar** namespace. The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **Sensitivity** element MUST be one of the values listed in the following table.

Value	Meaning
0	Normal
1	Personal
2	Private
3	Confidential

2.2.2.40   StartTime

As a top-level element of the **Calendar** class, the **StartTime** element is an optional element that specifies the start time of the calendar item. The client SHOULD include the **StartTime** element in a **Sync** command request ([MS-ASCMD] section 2.2.2.19).

For details about server behavior when a calendar event is received that is missing either the **StartTime** element (section 2.2.2.40), the **EndTime** element, or both, see section 3.2.4.4.

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

As an optional child element of the **Exception** element (section 2.2.2.19), the **StartTime** element specifies the start time of the calendar item exception. If the **StartTime** element is not specified as a child element of an **Exception** element, the value of the **StartTime** element for the exception is assumed to be the same as the value of the top-level **StartTime** element.

The **StartTime** element is defined as an element in the **Calendar** namespace. The value of this element is a **string** data type, represented as a **Compact DateTime** ([MS-ASDTYPE] section 2.6.5).

2.2.2.41 Subject

As a top-level element of the **Calendar** class, the **Subject** element is an optional element that specifies the subject of the calendar item. It is used in ActiveSync command requests and responses as specified in section 2.2.2.

As an optional child element of the **Exception** element (section 2.2.2.19), the **Subject** element specifies the subject of the calendar item exception. If the **Subject** element is not specified as a child element of an **Exception** element, the value of this element is assumed to be the same as the value of the top-level **Subject** element.

The **Subject** element is defined as an element in the **Calendar** namespace. The value of this element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6.

2.2.2.42 Timezone

The **Timezone** element is an optional element that specifies the time zone of the calendar item. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of the **Timezone** element is a **TimeZone** data type, as specified in [MS-ASDTYPE] section 2.6.4.

2.2.2.43 Type

The **Type** element is a required child element of the **Recurrence** element (section 2.2.2.35) that specifies the type of the recurrence. It is defined as an element in the **Calendar** namespace.

A command request or response has only one **Type** child element per **Recurrence** element.

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **Type** element MUST be one of the values listed in the following table.

Value	Meaning
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.

2.2.2.44 UID

The **UID** element is an optional element in the command request that specifies a random hexadecimal ID generated by the client when the calendar item is created. It is defined as an element in the **Calendar** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of the **UID** element is a **string** data type, as specified in [MS-ASDTYPE] section 2.6. The maximum length of this element is 300 characters.

If the **UID** element is not included in the command request, the server creates a value and includes it in the command response.

2.2.2.45 Until

The **Until** element is an optional child element of the **Recurrence** element (section 2.2.2.35) that specifies the end date and time of the recurrence. It is defined as an element in the **Calendar** namespace.

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

The **Until** element and the **Occurrences** element (section 2.2.2.30) are mutually exclusive. It is recommended that only one of these elements be included as a child element of a **Recurrence** element in a **Sync** command request.

The value of the **Until** element is a **string** data type, represented as a **Compact DateTime** ([MS-ASDTYPE] section 2.6.5).

2.2.2.46 WeekOfMonth

The **WeekOfMonth** element is a child element of the **Recurrence** element (section 2.2.2.35) that specifies either the week of the month or the day of the month for the recurrence, depending on the value of the **Type** element. It is defined as an element in the **Calendar** namespace.

A command request or response has a minimum of one **WeekOfMonth** child element per **Recurrence** element when the value of the **Type** element (section 2.2.2.43) is either 3 or 6.

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

The value of this element is an **unsignedByte** data type, as specified in [MS-ASDTYPE] section 2.7.

The value of the **WeekOfMonth** element MUST be between 1 and 5. The value of 5 specifies the last week of the month.

The **WeekOfMonth** element MUST only be included in requests or responses when the **Type** element (section 2.2.2.43) value is either 3 or 6.

When the **Type** element is set to 3, to indicate monthly on the *n*th of the month, the **WeekOfMonth** element MAY be used to specify day of the month on which the event occurs. For more details, see section 2.2.2.35.1.

2.2.3   Groups

The following table summarizes the set of common XML schema group definitions defined by this specification. XML schema groups that are specific to a particular operation are described with the operation.

Group	Description
TopLevelSchemaProps (section 2.2.3.1)	Identifies the elements that are part of the **TopLevelSchemaProps** group.

2.2.3.1   TopLevelSchemaProps

The **TopLevelSchemaProps** group identifies the following elements as being part of the **TopLevelSchemaProps** group:

- **Timezone**, as specified in section 2.2.2.42

- **StartTime**, as specified in section 2.2.2.40

- **EndTime**, as specified in section 2.2.2.18

- **Subject**, as specified in section 2.2.2.41

- **Location**, as specified in section 2.2.2.41

- **Reminder**, as specified in section 2.2.2.36

- **AllDayEvent**, as specified in section 2.2.2.1

- **BusyStatus**, as specified in section 2.2.2.8

- **Recurrence**, as specified in section 2.2.2.35

- **Sensitivity**, as specified in section 2.2.2.39

- **DtStamp**, as specified in section 2.2.2.16

- **Attendees**, as specified in section 2.2.2.4

- **Categories**, as specified in section 2.2.2.10

- **MeetingStatus**, as specified in section 2.2.2.26

- **OrganizerName**, as specified in section 2.2.2.34

- **OrganizerEmail**, as specified in section 2.2.2.33

- **UID**, as specified in section 2.2.2.44

- **DisallowNewTimeProposal**, as specified in section 2.2.2.15

- **ResponseRequested**, as specified in section 2.2.2.37

- **Exceptions**, as specified in section 2.2.2.20

The **TopLevelSchemaProps** group is used by the **ItemOperations** command request specified in [MS-ASCMD] section 2.2.2.8.

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 returned by the server to the client as part of a full XML response to the client command requests that are specified in section 3.1.5. **Calendar** class data is included in command requests sent to the server when calendar items need to be retrieved, searched, or synchronized.

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 Between Client and Server

A client initiates synchronization of **Calendar** class data with the server by sending a **Sync** command request ([MS-ASCMD] section 2.2.2.19) to the server.

3.1.4.2   Searching a Server for Calendar Data

A client searches for **Calendar** class data on the server by sending a **Search** command request ([MS-ASCMD] section 2.2.2.14) to the server.

3.1.4.3   Requesting Details for One or More Calendar Items

A client requests **Calendar** class data for one or more individual calendar items by sending an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8) to the server that contains one or more **itemoperations:Fetch** elements ([MS-ASCMD] section 2.2.3.63.1).

3.1.4.4   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 ([MS-ASCMD] section 2.2.2.19). [MS-ASCMD] section 4.15.3 specifies an example that demonstrates a meeting request included in a **Sync** command response.

3.1.5 Message Processing Events and Sequencing Rules

The following sections specify how 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 an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8) that contains one or more **itemoperations:Fetch** elements ([MS-ASCMD] section 2.2.3.63.1) to retrieve data from the server for one or more specific calendar items.

Any of the elements that belong to the **Calendar** class, as specified in section 2.2.2, can be included in an **ItemOperations** command request.

Top-level **Calendar** class elements, as specified in section 2.2.2, MUST be transmitted as child elements of the **itemoperations:Schema** element ([MS-ASCMD] section 2.2.3.145).

For more details about the **ItemOperations** command, see [MS-ASCMD] section 2.2.2.8.

3.1.5.2 Search Command Request

A client uses the **Search** command request ([MS-ASCMD] section 2.2.2.14) to retrieve **Calendar** class items from the server that match the criteria specified by the client.

Elements that belong to the **Calendar** class, as specified in section 2.2.2, MUST NOT be included in a **Search** command request.

For more details about the **Search** command, see [MS-ASCMD] section 2.2.2.14.

3.1.5.3 Sync Command Request

A client uses the **Sync** command request ([MS-ASCMD] section 2.2.2.19) to synchronize its **Calendar** class items for a specified user with the calendar items that are currently stored by the server.

Any of the elements that belong to the **Calendar** class, as specified in section 2.2.2, can be included in a **Sync** command request.

Top-level **Calendar** class elements, as specified in section 2.2.2, can be transmitted as child elements of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) within either an **airsync:Add** element ([MS-ASCMD] section 2.2.3.7.2) or an **airsync:Change** element ([MS-ASCMD] section 2.2.3.24).

Top-level **Calendar** class elements can be transmitted as child elements of the **airsync:Supported** element ([MS-ASCMD] section 2.2.3.164) in order to support ghosted elements. A specific subset of the **Calendar** class elements is required in this instance. The full list is specified in [MS-ASCMD] section 2.2.3.164.

For more details about the **Sync** command, see [MS-ASCMD] section 2.2.2.19.

3.1.5.3.1 Indicating Deleted Elements in Exceptions

If an element in a recurring calendar item has been deleted in an **Exception** element (section 2.2.2.19), the client sends an empty tag for this element to remove the inherited value from the server. For example, if the **Location** element (section 2.2.2.25) has been deleted for an exception,

the client sends an empty **Location** element in a **Sync** command request ([MS-ASCMD] section 2.2.2.19).

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

3.1.5.3.2 Omitting Ghosted Properties from a Sync Change Request

When the client sends a **Sync** command request ([MS-ASCMD] section 2.2.2.19) to the server that contains a nonzero **airsync:SyncKey** element ([MS-ASCMD] section 2.2.3.166.4) value, the client uses the **airsync:Supported** element ([MS-ASCMD] section 2.2.3.164) within the **Sync** command request to specify which properties are not ghosted. In subsequent **Sync** command requests, the client includes only the set of **airsync:Supported** elements in the **Sync** command request's **airsync:Change** element ([MS-ASCMD] section 2.2.3.24).

For more details about ghosted properties, see [MS-ASCMD] section 2.2.3.164.

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 2.2. It is returned by the server to the client as part of a full XML response to the client command requests that are specified in section 3.1.5. **Calendar** class data is included in command requests sent to the server when calendar items need to be retrieved, searched, or synchronized.

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

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

3.2.4.1 Synchronizing Calendar Data Between Client and Server

Synchronization of **Calendar** class data between client and server is initiated by the client, as specified in section 3.1.4.1. The server responds with a **Sync** command response ([MS-ASCMD] section 2.2.2.19).

3.2.4.2 Searching for Calendar Data

Searching for **Calendar** class data is initiated by the client, as specified in section 3.1.4.2. The server responds with a **Search** command response ([MS-ASCMD] section 2.2.2.14).

3.2.4.3 Retrieving Details for One or More Calendar Items

Retrieval of **Calendar** class data for one or more individual calendar items is initiated by the client, as specified in section 3.1.4.3. The server responds with an **ItemOperations** command response ([MS-ASCMD] section 2.2.2.8).

3.2.4.4 Creating Calendar Events when the StartTime Element or EndTime Element is Absent

If the server receives a Sync command request ([MS-ASCMD] section 2.2.2.19) to add a calendar event that is missing either the **StartTime** element (section 2.2.2.40), the **EndTime** element (section 2.2.2.18), or both, the server attempts to substitute values based on the current time, rounded to the nearest half hour, for the missing values. For example, if the server receives a Sync command request at 18:03 to add a new calendar event, the server rounds the current time to 18:30. The server sets the **StartTime** and **EndTime** elements as specified in the following table.

StartTime	EndTime	Result
Absent	Absent	The server sets the value of the **StartTime** element to the rounded current time, and sets the value of the **EndTime** element to the rounded current time plus 30 minutes.
Absent	In the past	The server includes a **Status** element with a value of 6 in the response, as specified in [MS-ASCMD] section 2.2.3.162.16, indicating an error occurred.
Absent	In the future	The server sets the value of the **StartTime** element to the rounded current time and sets the value of the **EndTime** element to the value of the **EndTime** element in the request. If the rounded current time is after the end time, the server includes a Status element with a value of 6 in the response, indicating an error occurred.
In the past	Absent	The server sets the value of the **StartTime** element to the value of the **StartTime** element in the request and sets the value of the **EndTime** element to the rounded current time.
In the future	Absent	The server includes a **Status** element with a value of 6 in the response, indicating an error occurred.

3.2.5 Message Processing Events and Sequencing Rules

The following information pertains to all command responses:

- A server MUST recognize when the value of the **Email** element is not formatted as specified in [MS-ASDTYPE] section 2.6.2, and MUST replace it with suitable placeholder text.

- If no action has been taken on a meeting request, the server MUST NOT include the **AppointmentReplyTime** element as a top-level element in a command response. If a meeting request exception has been neither accepted nor tentatively accepted, the server MUST NOT include the **AppointmentReplyTime** element as a child element of the **Exception** element in a command response.

- The server MUST return a **FirstDayOfWeek** element when the value of the **Type** element (section 2.2.2.43) is 1.

- If the **FirstDayOfWeek** element is not included in the client request, the server SHOULD identify the first day of the week for any recurrence according to the preconfigured options of the user creating the calendar item.

The following sections specify how 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

When a client uses an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8), as specified in section 3.1.5.1, to retrieve data from the server for one or more specific calendar items, the server responds with an **ItemOperations** command response ([MS-ASCMD] section 2.2.2.8).

Any of the elements that belong to the **Calendar** class, as specified in section 2.2.2, can be included in an **ItemOperations** command response. If an **airsync:Schema** element ([MS-ASCMD] section 2.2.3.145) is included in the **ItemOperations** command request, the elements returned in the **ItemOperations** command response MUST be restricted to the elements that were included as child elements of the **airsync:Schema** element in the command request.

Top-level **Calendar** class elements, as specified in section 2.2.2, MUST be returned as child elements of the **itemoperations:Properties** element ([MS-ASCMD] section 2.2.3.128) in the **ItemOperations** command response.

For more details about the **ItemOperations** command, see [MS-ASCMD] section 2.2.2.8.

3.2.5.2 Search Command Response

When a client uses the **Search** command request ([MS-ASCMD] section 2.2.2.14), as specified in section 3.1.5.2, to retrieve **Calendar** class items from the server that match the criteria specified by the client, the server responds with a **Search** command response ([MS-ASCMD] section 2.2.2.14).

Any of the elements that belong to the **Calendar** class, as specified in section 2.2.2, can be included in a **Search** command response.

Top-level **Calendar** class elements MUST be returned as child elements of the **search:Properties** element ([MS-ASCMD] section 2.2.3.128) in the **Search** command response.

For more details about the **Search** command, see [MS-ASCMD] section 2.2.2.14.

3.2.5.3 Sync Command Response

When a client uses the **Sync** command request ([MS-ASCMD] section 2.2.2.19), as specified in section 3.1.5.3, to synchronize its **Calendar** class items for a specified user with the calendar items

that are currently stored by the server, the server responds with a **Sync** command response ([MS-ASCMD] section 2.2.2.19).

Top-level **Calendar** class elements, as specified in section 2.2.2, can be included in a **Sync** command response as child elements of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) within either an **airsync:Add** element ([MS-ASCMD] section 2.2.3.7.2) or an **airsync:Change** element ([MS-ASCMD] section 2.2.3.24) in the **Sync** command response.

If one or more properties of an exception for recurring calendar item (that is, any child elements of the **Exception** element (section 2.2.2.19)) have been deleted, the server MUST transmit an empty element in the **Sync** command response to indicate that this property is not inherited from the recurrence.

If both the **Occurrences** element (section 2.2.2.30) and the **Until** element (section 2.2.2.45) are included in a **Sync** command request, then the server MUST respect the value of the Occurrences element and ignore the value of the Until element.

The **Sync** command response contains an **airsync:Status** element ([MS-ASCMD] section 2.2.3.162.16) with a value of 6 in the following cases:

- A command request has more than one **CalendarType** element (section 2.2.2.9) per **Recurrence** element (section 2.2.2.35) when the **Type** element (section 2.2.2.43) value is 2, 3, 5, or 6.

- The **CalendarType** element is set to one of the following values in the request: 13, 16, 17, 18, 19, 21, 22, or 23.

- The value of the **FirstDayOfWeek** element (section 2.2.2.22) is outside the range 0 (zero) through 6 (inclusive).

- The **EndTime** element (section 2.2.2.18) is included in a request and the **StartTime** element is not included in the request.

- The **DayOfMonth** element (section 2.2.2.12) is included in a request when the value of the **Type** element is not 2 or 5.

- The **DayOfWeek** element (section 2.2.2.13) is included in a request when the value of the **Type** element is not 0 (zero), 1, 3, or 6.

- The **MonthOfYear** element (section 2.2.2.27) is included in a request when the value of the **Type** element is not 5 or 6.

- The **WeekOfMonth** element (section 2.2.2.46) is included in a request when the value of the **Type** element is not 3 or 6.

For more details about the **Sync** command, see [MS-ASCMD] section 2.2.2.19.

3.2.5.3.1   Removing Exceptions

If an **Exceptions** element (section 2.2.2.20) is not specified in a **Sync** command request ([MS-ASCMD] section 2.2.2.19), then any exceptions previously defined are unchanged, even if the client included the **Exceptions** element as a child of the **Supported** element, as specified in [MS-ASCMD] section 2.2.3.164. If a particular **Exception** element (section 2.2.2.19) is excluded in a **Sync** command request, then that particular exception remains unchanged.

3.2.5.3.2 Indicating Deleted Elements in Exceptions

If an element of a recurring calendar item has been deleted in an **Exception** element (section 2.2.2.19), the server MUST send an empty tag for this element in the **Sync** command response ([MS-ASCMD] section 2.2.2.19). For example, if the **Location** element (section 2.2.2.25) has been deleted for an exception, the server sends an empty **Location** element in the **Sync** command response.

3.2.5.3.3 Omitting Ghosted Properties from a Sync Change Request

When the client sends a **Sync** command request ([MS-ASCMD] section 2.2.2.19) to the server that contains a nonzero **airsync:SyncKey** element ([MS-ASCMD] section 2.2.3.166.4) value, the client uses the **airsync:Supported** element within the **Sync** command request to specify which properties are not ghosted. In subsequent **Sync** command requests, the client includes only these elements in the **Sync** command request's **airsync:Change** element ([MS-ASCMD] section 2.2.3.24). Ghosted elements are not sent to the server. Instead of deleting these excluded properties, the server preserves their previous value.

For more details about ghosted properties, see [MS-ASCMD] section 2.2.3.164.

3.2.6 Timer Events

None.

3.2.7 Other Local Events

None.

4   Protocol Examples

4.1   Synchronizing Calendar Data

The following example demonstrates a client request to synchronize calendar data with the server, and the server response. Elements of the **Calendar** class are child elements of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) under the **airsync:Add** element ([MS-ASCMD] section 2.2.3.7.2) and the **airsync:Change** element ([MS-ASCMD] section 2.2.3.24) in the server response.

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:calendar="Calendar:" xmlns:airsyncbase="AirSyncBase:">
  <Collections>
    <Collection>
      <SyncKey>664578668</SyncKey>
      <CollectionId>1</CollectionId>
      <Status>1</Status>
      <Commands>
        <Change>
          <ServerId>1:12</ServerId>
          <ApplicationData>

<calendar:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIABEAG
EAeQBsAGkAZwBoAHQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMAAAACAAIAAAA
AAAAAxP///w==</calendar:Timezone>
          <calendar:DtStamp>20081002T231357Z</calendar:DtStamp>
          <calendar:StartTime>20081010T190000Z</calendar:StartTime>
          <calendar:Subject>Lunch meeting</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E008000000001027EAEDA124C9010000000000000000001000000
0C58EA426C0CFF24AB3125200707153B1</calendar:UID>
          <calendar:OrganizerName>Anat Kerry</calendar:OrganizerName>
          <calendar:OrganizerEmail>anat@contoso.com</calendar:OrganizerEmail>
          <calendar:Location>Cafeteria A</calendar:Location>
          <calendar:EndTime>20081010T203000Z</calendar:EndTime>
          <airsyncbase:Body>
            <airsyncbase:Type>3</airsyncbase:Type>
            <airsyncbase:EstimatedDataSize>5669</airsyncbase:EstimatedDataSize>
            <airsyncbase:Truncated>1</airsyncbase:Truncated>
```

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

<calendar:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQAIABUAGk
AbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMAAAACAAIAAAAAAAAAxP///w==</calendar:Timezone>
                    <calendar:DtStamp>20081002T231335Z</calendar:DtStamp>
                    <calendar:StartTime>20081013T170000Z</calendar:StartTime>
                    <calendar:Subject>Dry Run of TechEd Presentation</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E008000000009003C9E1A924C901000000000000000000010000000
0B3635D1E1A2FF54FA575AB96797F532F</calendar:UID>
                    <calendar:OrganizerName>Anat Kerry</calendar:OrganizerName>
                    <calendar:OrganizerEmail>anatcontoso.com</calendar:OrganizerEmail>
                    <calendar:Location>Conf Room 33-A/1298</calendar:Location>
                    <calendar:EndTime>20081013T180000Z</calendar:EndTime>
                    <airsyncbase:Body>
                        <airsyncbase:Type>3</airsyncbase:Type>
                        <airsyncbase:EstimatedDataSize>5669</airsyncbase:EstimatedDataSize>
                        <airsyncbase:Truncated>1</airsyncbase:Truncated>
                    </airsyncbase:Body>
                    <calendar:Sensitivity>0</calendar:Sensitivity>
                    <calendar:BusyStatus>2</calendar:BusyStatus>
                    <calendar:AllDayEvent>0</calendar:AllDayEvent>
                    <calendar:Reminder>15</calendar:Reminder>
                    <calendar:MeetingStatus>0</calendar:MeetingStatus>
                    <airsyncbase:NativeBodyType>3</airsyncbase:NativeBodyType>
                </ApplicationData>
            </Add>
            <Add>
                <ServerId>1:14</ServerId>
                <ApplicationData>

<calendar:Timezone>4AEAAFAAYQBjAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQAIABUAGk
AbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAMAAAACAAIAAAAAAAAAxP///w==</calendar:Timezone>
                    <calendar:DtStamp>20081002T231639Z</calendar:DtStamp>
                    <calendar:StartTime>20081013T190000Z</calendar:StartTime>
                    <calendar:Subject>Team Meeting</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E0080000000060043DFCA924C901000000000000000000010000000
097F14EF755AC454BA30EFA7B1B315E43</calendar:UID>
                    <calendar:OrganizerName>Anat Kerry</calendar:OrganizerName>
                    <calendar:OrganizerEmail>anat@contoso.com</calendar:OrganizerEmail>
                    <calendar:Location>My office</calendar:Location>
                    <calendar:EndTime>20081013T193000Z</calendar:EndTime>
                    <calendar:Recurrence>
                        <calendar:Type>3</calendar:Type>
                        <calendar:Interval>1</calendar:Interval>
                        <calendar:Until>20090713T190000Z</calendar:Until>
```

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

4.2 Synchronizing Recurring Appointments with Exceptions

The following example demonstrates a client request to synchronize calendar data with the server, and the server response. In this example, the server response contains a weekly recurring appointment with a single exception.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:calendar="Calendar:" xmlns:airsyncbase="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:calendar="Calendar:" xmlns:airsyncbase="AirSyncBase:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>573512161</SyncKey>
      <CollectionId>1</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>1:1</ServerId>
          <ApplicationData>
```

```
<calendar:Timezone>4AEAACgARwBNAFQALQAwADgAOgAwADAAKQAgAFAAYQBjAGkAZgBpAGMAIABUAGkA
bQBlACAAKABVAFMAIAAmACAAQwAAAsAAAABAAIAAAAAAAAAAAAAACgARwBNAFQALQAwADgAOgAwAA
DAAKQAgAFAAYQBjAGkAZgBpAGMAIABUAGkAbQBlACAAKABVAFMAIAAmACAAQwAAAMAAAACAAIAAA
AAAAAxP///w==</calendar:Timezone>
            <calendar:DtStamp>20090415T165811Z</calendar:DtStamp>
            <calendar:StartTime>20090417T170000Z</calendar:StartTime>
            <calendar:Subject>Recurring appointment test</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E00800000000B0CD1F52EBBDC9010000000000000
00010000000B05E442FCB2CA443BF3D99B51A729FE6</calendar:UID>
            <calendar:OrganizerName>Anat Kerry</calendar:OrganizerName>
            <calendar:OrganizerEmail>anat@contoso.com </calendar:OrganizerEmail>
            <calendar:Location>My office</calendar:Location>
            <calendar:EndTime>20090417T180000Z</calendar:EndTime>
            <calendar:Recurrence>
              <calendar:Type>1</calendar:Type>
              <calendar:Interval>1</calendar:Interval>
              <calendar:Occurrences>3</calendar:Occurrences>
              <calendar:DayOfWeek>32</calendar:DayOfWeek>
            </calendar:Recurrence>
            <airsyncbase:Body>
              <airsyncbase:Type>3</airsyncbase:Type>
              <airsyncbase:EstimatedDataSize>238</airsyncbase:EstimatedDataSize>
              <airsyncbase:Truncated>1</airsyncbase:Truncated>
            </airsyncbase:Body>
            <calendar:Sensitivity>0</calendar:Sensitivity>
            <calendar:BusyStatus>2</calendar:BusyStatus>
            <calendar:AllDayEvent>0</calendar:AllDayEvent>
            <calendar:Reminder>15</calendar:Reminder>
            <calendar:Exceptions>
              <calendar:Exception>
                <calendar:Deleted>1</calendar:Deleted>
                <calendar:ExceptionStartTime>20090424T170000Z</calendar:ExceptionStartTime>
              </calendar:Exception>
            </calendar:Exceptions>
            <calendar:MeetingStatus>0</calendar:MeetingStatus>
            <airsyncbase:NativeBodyType>3</airsyncbase:NativeBodyType>
            <calendar:ResponseRequested>1</calendar:ResponseRequested>
            <calendar:ResponseType>1</calendar:ResponseType>
          </ApplicationData>
        </Add>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

4.3 Setting Attendee Status from the Server

The following example demonstrates a **Sync** command response ([MS-ASCMD] section 2.2.2.19) from the server that contains a new meeting, and a **Sync** command response from the server that shows changes to the calendar item that reflect an attendee has accepted the meeting invitation.

In the following **Sync** command response, the new meeting has one attendee. The organizer is not included in the attendee list; rather, the organizer's information is specified by the **calendar:OrganizerEmail** element (section 2.2.2.33) and the **calendar:OrganizerName** (section 2.2.2.34) element.

```xml
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:" xmlns:calendar="Calendar:"
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
            IABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
            QAAAABAAIAAAAAAAAAxP///w==</calendar:Timezone>
            <calendar:DtStamp>20051103T010509Z</calendar:DtStamp>
            <calendar:StartTime>20051103T230000Z</calendar:StartTime>
            <calendar:Subject>test meeting</calendar:Subject>
            <calendar:UID>040000008200E00074C5B7101A82E0080000000
            0B0FD68A212E0C501000000000000000000100000008C46B9A4960AF
            340871367CEC57B4543</calendar:UID>
            <calendar:Attendees>
              <calendar:Attendee>
                <calendar:Email>chris@fourthcoffee.com
                </calendar:Email>
                <calendar:Name>Chris Gray</calendar:Name>
                <calendar:AttendeeStatus>0</calendar:AttendeeStatus>
                <calendar:AteendeeType>1</calendar:AttendeeType>
              </calendar:Attendee>
            </calendar:Attendees>
            <calendar:OrganizerName>Anat Kerry
            </calendar:OrganizerName>
            <calendar:OrganizerEmail>anat@contoso.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 **Sync** command response contains a change to the calendar item that reflects that an attendee has accepted the meeting invitation. In this example, the value of the

calendar:AttendeeStatus element (section 2.2.2.5) is 3, indicating that the attendee has accepted the meeting invitation.

```xml
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:" xmlns:calendar="Calendar:"
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
            AAAAAAAAoAAAAFAAIAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIA
            BEAGEAeQBsAGkAZwBoAHQAIABUAGkAbQBlAAAAAAAAAAAAAAAAA
            AAAAAAAAAAAAAAAQAAAABAAIAAAAAAAAAxP///w==
            </calendar:Timezone>
            <calendar:DtStamp>20051103T013759Z</calendar:DtStamp>
            <calendar:StartTime>20051103T230000Z</calendar:StartTime>
            <calendar:Subject>test meeting</calendar:Subject>
            <calendar:UID>040000008200E00074C5B7101A82E00800000000B
            0FD68A212E0C50100000000000000000100000008C46B9A4960AF
            340871367CEC57B4543</calendar:UID>
            <calendar:Attendees>
              <calendar:Attendee>
                <calendar:Email>chris@fourthcoffee.com
                </calendar:Email>
                <calendar:Name>Chris Gray</calendar:Name>
                <calendar:AttendeeStatus>3</calendar:AttendeeStatus>
                <calendar:AttendeeType>1</calendar:AttendeeType>
              </calendar:Attendee>
            </calendar:Attendees>
            <calendar:OrganizerName>Anat Kerry
            </calendar:OrganizerName>
            <calendar:OrganizerEmail>anat@contoso.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>
```

4.4 Creating Recurring Calendar Items

The following examples demonstrate how to create common daily, monthly, and yearly recurrence patterns.

The following is a daily event, occurring every day.

```
<Recurrence>
     <Type>0</Type>
     <Interval>1</Interval>
</Recurrence>
```

The following is a daily event, occurring every other day.

```
<Recurrence>
     <Type>0</Type>
     <Interval>2</Interval>
</Recurrence>
```

The following is a weekly event, occurring every weekday.

```
<Recurrence>
     <Type>1</Type>
     <Interval>1</Interval>
     <DayOfWeek>62</DayOfWeek>
</Recurrence>
```

The following is a weekly event, occurring every Saturday.

```
<Recurrence>
     <Type>1</Type>
     <Interval>1</Interval>
     <DayOfWeek>64</DayOfWeek>
</Recurrence>
```

The following is a monthly event, occurring on the first day of every month.

```
<Recurrence>
     <Type>2</Type>
     <Interval>1</Interval>
     <DayOfMonth>1</DayOfMonth>
</Recurrence>
```

The following is a monthly event, occurring on the last day of every month.

```
<Recurrence>
     <Type>3</Type>
     <Interval>1</Interval>
     <WeekOfMonth>5</WeekOfMonth>
     <DayOfWeek>127</DayOfWeek>
</Recurrence>
```

The following is a monthly event, occurring on the first Saturday of every month.

```
<Recurrence>
     <Type>3</Type>
     <Interval>1</Interval>
     <WeekOfMonth>1</WeekOfMonth>
     <DayOfWeek>64</DayOfWeek>
</Recurrence>
```

The following is a monthly event, occurring on the first weekday of every month.

```
<Recurrence>
     <Type>3</Type>
     <Interval>1</Interval>
     <WeekOfMonth>1</WeekOfMonth>
     <DayOfWeek>62</DayOfWeek>
</Recurrence>
```

The following is a monthly event, occurring on the first weekend day of every month.

```
<Recurrence>
     <Type>3</Type>
     <Interval>1</Interval>
     <WeekOfMonth>1</WeekOfMonth>
     <DayOfWeek>65</DayOfWeek>
</Recurrence>
```

The following is a yearly event, occurring on the first day of June, every year.

```
<Recurrence>
     <Type>5</Type>
     <Interval>1</Interval>
     <DayOfMonth>1</DayOfMonth>
     <MonthOfYear>6</MonthOfYear>
</Recurrence>
```

The following is a yearly event, occurring on the first Saturday of June, every year.

```
<Recurrence>
     <Type>6</Type>
     <Interval>1</Interval>
     <WeekOfMonth>1</WeekOfMonth>
     <DayOfWeek>64</DayOfWeek>
     <MonthOfYear>6</MonthOfYear>
</Recurrence>
```

The following is a yearly event, occurring on the last day of June each month.

```
<Recurrence>
     <Type>6</Type>
     <Interval>1</Interval>
     <WeekOfMonth>5</WeekOfMonth>
```

```
    <DayOfWeek>127</DayOfWeek>
    <MonthOfYear>6</MonthOfYear>
</Recurrence>
```

4.5   Recurrence Patterns that Resolve to the Same Recurring Calendar Item

As specified in section 2.2.2.35.1, is possible to create the same recurring event using different recurrence patterns. For example, both of the following recurrence patterns create events on the second day of the month.

```
<Recurrence>
    //The Type element is set to monthly recurrence (2).
    <Type>2</Type>
    //The Interval element is set to occur every month (1).
    <Interval>1</Interval>
    //The DayOfMonth element is set to occur on the second day of the month (2).
    <DayOfMonth>2</DayOfMonth>
    //The CalendarType element is set to Gregorian (1).
    <CalendarType>1</CalendarType>
</Recurrence>

<Recurrence>
    //The Type element is set to monthly recurrence on the nth day (3).
    <Type>3</Type>
    //The Interval element is set to occur every month (1).
    <Interval>1</Interval>
    //The WeekOfMonth element is set to occur on the second day of the month,
    //because the DayOfWeek element is set to 127.
    <WeekOfMonth>2</WeekOfMonth>
    <DayOfWeek>127</DayOfWeek>
    //The CalendarType element is set to Gregorian (1).
    <CalendarType>1</CalendarType>
</Recurrence>
```

Both of the following recurrence patterns create events that occur every Saturday.

```
<Recurrence>
    //The Type element is set to daily recurrence (0).
    <Type>0</Type>
    //The Interval element is set to occur every day (1).
    <Interval>1</Interval>
    //Because the DayOfWeek element is set, the value of the Interval
    //element indicates the number of weeks between each occurrence.
    //The DayOfWeek element is set to Saturday (64).
    <DayOfWeek>64</DayOfWeek>
</Recurrence>

<Recurrence>
    //The Type element is set to weekly recurrence (0).
    <Type>1</Type>
    //The Interval element is set to occur every week (1).
    <Interval>1</Interval>
    //Because the DayOfWeek element is set, the value of the Interval
    //element indicates the number of weeks between each occurrence.
    //The DayOfWeek element is set to Saturday (64).
    <DayOfWeek>64</DayOfWeek>
```

```
</Recurrence>
```

5   Security

5.1   Security Considerations for Implementers

None.

5.2   Index of Security Parameters

None.

6   Appendix A: Full XML Schema

For ease of implementation, this section contains the contents of the Calendar.xsd file, which represents the full XML schema for this protocol. The additional file that this schema file requires to operate correctly is listed in the following table.

File name	Defining specification
AirSyncBase.xsd	[MS-ASAIRS] section 6

```xml
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:airsyncbase=
    "AirSyncBase" xmlns="Calendar" targetNamespace="Calendar"
    elementFormDefault="qualified" attributeFormDefault="unqualified">
  <xs:import namespace="AirSyncBase" schemaLocation="AirSyncBase.xsd"/>
  <xs:element name="Timezone" type="xs:string"/>
  <xs:element name="AllDayEvent" type="xs:unsignedByte"/>
  <xs:element name="BusyStatus">
    <xs:simpleType>
      <xs:restriction base="xs:unsignedByte">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="3"/>
      </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:string"/>
  <xs:element name="EndTime" type="xs:string"/>
  <xs:element name="Location" type="xs:string"/>
  <xs:element name="Reminder" type="xs:unsignedInt"/>
  <xs:element 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 name="Subject" type="xs:string"/>
  <xs:element name="StartTime" type="xs:string"/>
  <xs:element name="UID">
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:maxLength value="300"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element 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"/>
```

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```xml
                  <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" minOccurs="0">
                          <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 name="Category" type="xs:string" maxOccurs="300"/>
                </xs:sequence>
              </xs:complexType>
            </xs:element>
            <xs:element name="Recurrence">
              <xs:complexType>
                <xs:all minOccurs="0">
                  <xs:element 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 name="Occurrences" type="xs:unsignedShort" minOccurs="0"/>
                  <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 name="DayOfWeek" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedShort">
              <xs:minInclusive value="1"/>
              <xs:maxInclusive value="127"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="MonthOfYear" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
              <xs:minInclusive value="1"/>
              <xs:maxInclusive value="12"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="Until" type="xs:string" minOccurs="0"/>
        <xs:element name="DayOfMonth" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
              <xs:minInclusive value="1"/>
              <xs:maxInclusive value="31"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="CalendarType" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
              <xs:minInclusive value="0"/>
              <xs:maxInclusive value="23"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="IsLeapMonth" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
              <xs:minInclusive value="0"/>
              <xs:maxInclusive value="1"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:element>
        <xs:element name="FirstDayOfWeek" minOccurs="0">
          <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
```

```
                    <xs:minInclusive value="0"/>
                    <xs:maxInclusive value="6"/>
                  </xs:restriction>
                </xs:simpleType>
              </xs:element>
            </xs:all>
          </xs:complexType>
        </xs:element>
        <xs:element name="Exceptions">
          <xs:complexType>
            <xs:sequence minOccurs="0">
              <xs:element name="Exception" maxOccurs="1000">
                <xs:complexType>
                  <xs:all>
                    <xs:element name="Deleted" type="xs:unsignedByte" minOccurs="0"/>
                    <xs:element name="ExceptionStartTime" type="xs:string"/>
                    <xs:element ref="Subject" minOccurs="0"/>
                    <xs:element ref="StartTime" minOccurs="0"/>
                    <xs:element ref="EndTime" minOccurs="0"/>
                    <xs:element ref="airsyncbase:Body" minOccurs="0"/>
                    <xs:element ref="Location" minOccurs="0"/>
                    <xs:element ref="Categories" minOccurs="0"/>
                    <xs:element ref="Sensitivity" minOccurs="0"/>
                    <xs:element ref="BusyStatus" minOccurs="0"/>
                    <xs:element ref="AllDayEvent" minOccurs="0"/>
                    <xs:element ref="Reminder" minOccurs="0"/>
                    <xs:element ref="DtStamp" minOccurs="0"/>
                    <xs:element ref="MeetingStatus" minOccurs="0"/>
                    <xs:element ref="Attendees" minOccurs="0"/>
                    <xs:element ref="AppointmentReplyTime" minOccurs="0"/>
                    <xs:element ref="ResponseType" minOccurs="0"/>
                    <xs:element ref="OnlineMeetingConfLink" minOccurs="0"/>
                    <xs:element ref="OnlineMeetingExternalLink" minOccurs="0"/>
                  </xs:all>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="ResponseRequested" type="xs:boolean"/>
        <xs:element name="AppointmentReplyTime" type="xs:string"/>
        <xs:element name="ResponseType" type="xs:unsignedInt"/>
        <xs:element name="DisallowNewTimeProposal" type="xs:boolean"/>
        <xs:element name="OnlineMeetingConfLink" type="xs:string"/>
        <xs:element name="OnlineMeetingExternalLink" type="xs:string"/>
        <xs:group name="AllProps">
          <xs:sequence>
            <xs:choice maxOccurs="unbounded">
              <xs:element ref="Timezone"/>
              <xs:element ref="AllDayEvent"/>
              <xs:element ref="BusyStatus"/>
              <xs:element ref="OrganizerName"/>
              <xs:element ref="OrganizerEmail"/>
              <xs:element ref="DtStamp"/>
              <xs:element ref="EndTime"/>
              <xs:element ref="Location"/>
              <xs:element ref="Reminder"/>
              <xs:element ref="Sensitivity"/>
              <xs:element ref="Subject"/>
```

```
            <xs:element ref="StartTime"/>
            <xs:element ref="UID"/>
            <xs:element ref="MeetingStatus"/>
            <xs:element ref="Attendees"/>
            <xs:element ref="Categories"/>
            <xs:element ref="Recurrence"/>
            <xs:element ref="Exceptions"/>
            <xs:element ref="ResponseRequested"/>
            <xs:element ref="AppointmentReplyTime"/>
            <xs:element ref="ResponseType"/>
            <xs:element ref="DisallowNewTimeProposal"/>
            <xs:element ref="OnlineMeetingConfLink"/>
            <xs:element ref="OnlineMeetingExternalLink"/>
        </xs:choice>
    </xs:sequence>
</xs:group>
<xs:group name="GhostingProps">
    <xs:sequence>
        <xs:choice maxOccurs="unbounded">
            <xs:element name="Timezone" type="airsyncbase:EmptyTag"/>
            <xs:element name="AllDayEvent" type="airsyncbase:EmptyTag"/>
            <xs:element name="BusyStatus" type="airsyncbase:EmptyTag"/>
            <xs:element name="OrganizerName" type="airsyncbase:EmptyTag"/>
            <xs:element name="OrganizerEmail" type="airsyncbase:EmptyTag"/>
            <xs:element name="DtStamp" type="airsyncbase:EmptyTag"/>
            <xs:element name="EndTime" type="airsyncbase:EmptyTag"/>
            <xs:element name="Location" type="airsyncbase:EmptyTag"/>
            <xs:element name="Reminder" type="airsyncbase:EmptyTag"/>
            <xs:element name="Sensitivity" type="airsyncbase:EmptyTag"/>
            <xs:element name="Subject" type="airsyncbase:EmptyTag"/>
            <xs:element name="StartTime" type="airsyncbase:EmptyTag"/>
            <xs:element name="UID" type="airsyncbase:EmptyTag"/>
            <xs:element name="MeetingStatus" type="airsyncbase:EmptyTag"/>
            <xs:element name="Attendees" type="airsyncbase:EmptyTag"/>
            <xs:element name="Categories" type="airsyncbase:EmptyTag"/>
            <xs:element name="Recurrence" type="airsyncbase:EmptyTag"/>
            <xs:element name="Exceptions" type="airsyncbase:EmptyTag"/>
            <xs:element name="DisallowNewTimeProposal"
                type="airsyncbase:EmptyTag"/>
            <xs:element name="ResponseRequested" type="airsyncbase:EmptyTag"/>
        </xs:choice>
    </xs:sequence>
</xs:group>
<xs:group name="TopLevelSchemaProps">
    <xs:sequence>
        <xs:choice maxOccurs="unbounded">
            <xs:element name="Timezone" type="airsyncbase:EmptyTag"/>
            <xs:element name="StartTime" type="airsyncbase:EmptyTag"/>
            <xs:element name="EndTime" type="airsyncbase:EmptyTag"/>
            <xs:element name="Subject" type="airsyncbase:EmptyTag"/>
            <xs:element name="Location" type="airsyncbase:EmptyTag"/>
            <xs:element name="Reminder" type="airsyncbase:EmptyTag"/>
            <xs:element name="AllDayEvent" type="airsyncbase:EmptyTag"/>
            <xs:element name="BusyStatus" type="airsyncbase:EmptyTag"/>
            <xs:element name="Recurrence" type="airsyncbase:EmptyTag"/>
            <xs:element name="Sensitivity" type="airsyncbase:EmptyTag"/>
            <xs:element name="DtStamp" type="airsyncbase:EmptyTag"/>
            <xs:element name="Attendees" type="airsyncbase:EmptyTag"/>
            <xs:element name="Categories" type="airsyncbase:EmptyTag"/>
```

```
              <xs:element name="MeetingStatus" type="airsyncbase:EmptyTag"/>
              <xs:element name="OrganizerName" type="airsyncbase:EmptyTag"/>
              <xs:element name="OrganizerEmail" type="airsyncbase:EmptyTag"/>
              <xs:element name="UID" type="airsyncbase:EmptyTag"/>
              <xs:element name="DisallowNewTimeProposal"
                    type="airsyncbase:EmptyTag"/>
              <xs:element name="ResponseRequested" type="airsyncbase:EmptyTag"/>
              <xs:element name="Exceptions" type="airsyncbase:EmptyTag"/>
          </xs:choice>
        </xs:sequence>
      </xs:group>
  </xs:schema>
```

7   Appendix B: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft Exchange Server 2007 Service Pack 1 (SP1)

- Microsoft Exchange Server 2010

- Microsoft Exchange Server 2013

- Windows Communication Apps

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

Unless otherwise specified, any statement of optional behavior in this specification that is prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that the product does not follow the prescription.

<1> Section 2.2.2.2: The **AppointmentReplyTime** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<2> Section 2.2.2.4: The **Attendees** element is not supported as a child of the **Exception** element when the MS-ASProtocolVersion header is set to 12.1.

<3> Section 2.2.2.9: The **CalendarType** element is not supported when the MS-ASProtocolVersion header is set to 12.1.

<4> Section 2.2.2.15: The **DisallowNewTimeProposal** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<5> Section 2.2.2.19: The **Attendees** element (section 2.2.2.4) is not supported as a child of the **Exception** element when the MS-ASProtocolVersion header is set to 12.1, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<6> Section 2.2.2.19: The **AppointmentReplyTime** element (section 2.2.2.2) is not supported as a child of the **Exception** element when the MS-ASProtocolVersion header is set to 12.1, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<7> Section 2.2.2.19: The **ResponseType** element (section 2.2.2.38) is not supported as a child of the **Exception** element when the MS-ASProtocolVersion header is set to 12.1, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<8> Section 2.2.2.19: The **OnlineMeetingConfLink** element (section 2.2.2.31) is not supported as a child of the **Exception** element when the MS-ASProtocolVersion header is set to 12.1 or 14.0, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<9> Section 2.2.2.19: The **OnlineMeetingExternalLink** element (section 2.2.2.32) is not supported as a child of the **Exception** element when the MS-ASProtocolVersion header is set to 12.1 or 14.0, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<10> Section 2.2.2.22: The **FirstDayOfWeek** element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<11> Section 2.2.2.24: The **IsLeapMonth** element is not supported when the MS-ASProtocolVersion header is set to 12.1.

<12> Section 2.2.2.26: The **MeetingStatus** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<13> Section 2.2.2.31: The **OnlineMeetingConfLink** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1 or 14.0, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<14> Section 2.2.2.32: The **OnlineMeetingExternalLink** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1 or 14.0, as specified in [MS-ASHTTP] section 2.2.1.1.2.4.

<15> Section 2.2.2.36: If the value of the MS-ASProtocolVersion header is set to 12.1 or 14.0, as described in [MS-ASHTTP] section 2.2.1.1.2.4, the value of the element cannot be an **EmptyTag**.

<16> Section 2.2.2.37: The **ResponseRequested** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<17> Section 2.2.2.38: The **ResponseType** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

<18> Section 2.2.2.38: The **ResponseType** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

8 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

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