

[MS-ASCAL]: ActiveSync Calendar Class Protocol Specification

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft's Open Specification Promise (available here: <http://www.microsoft.com/interop/osp>) or the Community Promise (available here: <http://www.microsoft.com/interop/cp/default.msp>). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

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

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

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.

Table of Contents

1 Introduction	6
1.1 Glossary	6
1.2 References	6
1.2.1 Normative References	6
1.2.2 Informative References	7
1.3 Overview	7
1.4 Relationship to Other Protocols	7
1.5 Prerequisites/Preconditions	7
1.6 Applicability Statement	8
1.7 Versioning and Capability Negotiation	8
1.8 Vendor-Extensible Fields	8
1.9 Standards Assignments	8
2 Messages	9
2.1 Transport	9
2.2 Message Syntax	9
2.2.1 Namespaces	14
2.2.2 Elements	14
2.2.2.1 AllDayEvent	17
2.2.2.2 AppointmentReplyTime	18
2.2.2.3 Attendee	18
2.2.2.4 Attendees	19
2.2.2.5 AttendeeStatus	19
2.2.2.6 AttendeeType	19
2.2.2.7 Body	20
2.2.2.8 BusyStatus	20
2.2.2.9 CalendarType	21
2.2.2.10 Categories	22
2.2.2.11 Category	22
2.2.2.12 DayOfMonth	22
2.2.2.13 DayOfWeek	23
2.2.2.14 Deleted	23
2.2.2.15 DisallowNewTimeProposal	24
2.2.2.16 DtStamp	24
2.2.2.17 Email	24
2.2.2.18 EndTime	25
2.2.2.19 Exception	25
2.2.2.20 Exceptions	26
2.2.2.21 ExceptionStartTime	26
2.2.2.22 FirstDayOfWeek	26
2.2.2.23 Interval	27
2.2.2.24 IsLeapMonth	27
2.2.2.25 Location	28
2.2.2.26 MeetingStatus	28
2.2.2.27 MonthOfYear	29
2.2.2.28 Name	29
2.2.2.29 NativeBodyType	29
2.2.2.30 Occurrences	29
2.2.2.31 OnlineMeetingConfLink	30
2.2.2.32 OnlineMeetingExternalLink	30

2.2.2.33	OrganizerEmail	30
2.2.2.34	OrganizerName	30
2.2.2.35	Recurrence	31
2.2.2.36	Reminder	31
2.2.2.37	ResponseRequested	32
2.2.2.38	ResponseType	32
2.2.2.39	Sensitivity	32
2.2.2.40	StartTime	33
2.2.2.41	Subject	33
2.2.2.42	Timezone	34
2.2.2.43	Type	34
2.2.2.44	UID	34
2.2.2.45	Until	34
2.2.2.46	WeekOfMonth	35
3	Protocol Details	36
3.1	Client Details	36
3.1.1	Abstract Data Model	36
3.1.2	Timers	36
3.1.3	Initialization	36
3.1.4	Higher-Layer Triggered Events	36
3.1.4.1	Synchronizing Calendar Data Between Client and Server	36
3.1.4.2	Searching a Server for Calendar Data	36
3.1.4.3	Requesting Details for One or More Calendar Items	36
3.1.4.4	Creating a New Meeting Request	36
3.1.5	Message Processing Events and Sequencing Rules	37
3.1.5.1	ItemOperations Command Request	37
3.1.5.2	Search Command Request	37
3.1.5.3	Sync Command Request	37
3.1.5.3.1	Indicating Deleted Elements in Exceptions	37
3.1.5.3.2	Omitting Ghosted Properties from a Sync Change Request	38
3.1.6	Timer Events	38
3.1.7	Other Local Events	38
3.2	Server Details	38
3.2.1	Abstract Data Model	38
3.2.2	Timers	38
3.2.3	Initialization	38
3.2.4	Higher-Layer Triggered Events	38
3.2.4.1	Synchronizing Calendar Data Between Client and Server	38
3.2.4.2	Searching for Calendar Data	39
3.2.4.3	Retrieving Details for One or More Calendar Items	39
3.2.5	Message Processing Events and Sequencing Rules	39
3.2.5.1	ItemOperations Command Response	39
3.2.5.2	Search Command Response	39
3.2.5.3	Sync Command Response	39
3.2.5.3.1	Removing Exceptions	40
3.2.5.3.2	Indicating Deleted Elements in Exceptions	40
3.2.5.3.3	Omitting Ghosted Properties from a Sync Change Request	40
3.2.6	Timer Events	40
3.2.7	Other Local Events	40
4	Protocol Examples	41
4.1	Synchronizing Calendar Data	41

4.2	Synchronizing Recurring Appointments with Exceptions	43
4.3	Setting Attendee Status from the Server	44
5	Security	47
5.1	Security Considerations for Implementers	47
5.2	Index of Security Parameters	47
6	Appendix A: Product Behavior	48
7	Change Tracking.....	49
8	Index	51

1 Introduction

The 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 contain RFC 2119 language. Sections 1.5 and 1.9 are also normative but cannot contain RFC 2119 language. All other sections and examples in this specification are informative.

1.1 Glossary

The following terms are defined in [\[MS-GLOS\]](#):

resource
XML

The following terms are defined in [\[MS-OXGLOS\]](#):

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

The following terms are specific to this document:

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

1.2 References

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

[MS-ASAIRS] Microsoft Corporation, "[ActiveSync AirSyncBase Namespace Protocol Specification](#)".

[MS-ASCMD] Microsoft Corporation, "[ActiveSync Command Reference Protocol Specification](#)".

[MS-ASDTYPE] Microsoft Corporation, "[ActiveSync Data Types](#)".

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

[MS-OXOCAL] Microsoft Corporation, "[Appointment and Meeting Object Protocol Specification](#)".

[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., Ed., Beech, D., Ed., Maloney, M., Ed., and Mendelsohn, N., Ed., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/>

1.2.2 Informative References

[MS-ASHTTP] Microsoft Corporation, "[ActiveSync HTTP Protocol Specification](#)".

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

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

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 2.2.3.154.

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 [\[MS-ASAIRS\]](#).

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

This protocol defines XML schema elements for the **Calendar** class, which represents a calendar item.

The XML schema for the **Calendar** class is defined as follows, in accordance with the rules specified in [\[XMLNS\]](#) and [\[XMLSCHEMA1\]](#). Except where otherwise specified, elements in this class are defined in the **Calendar** namespace.

```
<?xml version="1.0" ?>
<xs:schema xmlns:tns="Calendar:" attributeFormDefault="unqualified"
  elementFormDefault="qualified"
  targetNamespace="Calendar:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:airsynibase="AirSyncBase:">
  <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="5"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="OrganizerName" type="xs:string" />
  <xs:element name="OrganizerEmail" type="xs:string" />
  <xs:element name="DtStamp" type="xs:dateTime" />
  <xs:element name="EndTime" type="xs:dateTime" />
  <xs:element name="Location" type="xs:string" />
  <xs:element name="Reminder" type="xs:unsignedInt" />
  <xs:element name="Sensitivity">
    <xs:simpleType>
      <xs:restriction base="xs:unsignedByte">
        <xs:minInclusive value="0"/>
        <xs:maxInclusive value="3"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:element>
  <xs:element name="Subject" type="xs:string" />
  <xs:element name="StartTime" type="xs:dateTime" />
  <xs:element name="UID">
    <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"/>
            <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">
                            <xs:simpleType>
                                <xs:restriction
base="xs:unsignedByte">
                                    <xs:enumeration value="1"/>
                                    <xs:enumeration value="2"/>
                                    <xs:enumeration value="3"/>
                                </xs:restriction>
                            </xs:simpleType>
                        </xs:element>
                    </xs:all>
                </xs:complexType>
            </xs:element>
        </xs:sequence>
    </xs:complexType>
</xs:element>
<xs:element name="Categories">
    <xs:complexType>
        <xs:sequence minOccurs="0">

```

```

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

```

```

    <xs:element minOccurs="0" name="CalendarType">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedByte">
          <xs:minInclusive value="0"/>
          <xs:maxInclusive value="23"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element minOccurs="0" name="IsLeapMonth">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedByte">
          <xs:minInclusive value="0"/>
          <xs:maxInclusive value="1"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
    <xs:element minOccurs="0" name="FirstDayOfWeek">
      <xs:simpleType>
        <xs:restriction base="xs:unsignedByte">
          <xs:minInclusive value="0"/>
          <xs:maxInclusive value="6"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:element>
  </xs: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 minOccurs="0" name="Deleted"
              type="xs:unsignedByte" />
            <xs:element name="ExceptionStartTime"
              type="xs:dateTime" />
            <xs:element minOccurs="0" name="Subject"
              type="xs:string" />
            <xs:element minOccurs="0" name="StartTime"
              type="xs:dateTime" />
            <xs:element minOccurs="0" name="EndTime"
              type="xs:dateTime" />
            <xs:element minOccurs="0" name="Location"
              type="xs:string" />
            <xs:element minOccurs="0" name="Categories">
              <xs:complexType>
                <xs:sequence>
                  <xs:element maxOccurs="300" name="Category"
                    type="xs:string" />
                </xs:sequence>
              </xs:complexType>
            </xs:element>
            <xs:element minOccurs="0" name="Sensitivity">
              <xs:simpleType>
                <xs:restriction base="xs:unsignedByte">
                  <xs:minInclusive value="0"/>
                  <xs:maxInclusive value="3"/>
                </xs:restriction>
              </xs:simpleType>
            </xs:element>
          </xs:all>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

```

        </xs:simpleType>
    </xs:element>
    <xs:element minOccurs="0" name="BusyStatus">
        <xs:simpleType>
            <xs:restriction base="xs:unsignedByte">
                <xs:minInclusive value="0"/>
                <xs:maxInclusive value="5"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:element>
    <xs:element minOccurs="0"
name="AllDayEvent" type="xs:unsignedByte" />
    <xs:element minOccurs="0" name="Reminder"
type="xs:unsignedInt" />
    <xs:element minOccurs="0" name="DtStamp"
type="xs:dateTime" />
    <xs:element minOccurs="0" name="MeetingStatus">
        <xs:simpleType>
            <xs:restriction
base="xs:unsignedByte">
                <xs:enumeration value="1"/>
                <xs:enumeration value="0"/>
                <xs:enumeration value="3"/>
                <xs:enumeration value="5"/>
                <xs:enumeration value="7"/>
                <xs:enumeration value="9"/>
                <xs:enumeration value="11"/>
                <xs:enumeration value="13"/>
                <xs:enumeration value="15"/>
            </xs:restriction>
        </xs:simpleType>
    </xs:element>
    <xs:element minOccurs="0"
name="AppointmentReplyTime" type="xs:dateTime" />
    <xs:element minOccurs="0" name="ResponseType"
type="xs:unsignedInt" />
    </xs:all>
</xs:complexType>
</xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
<xs:element name="ResponseRequested" type="xs:boolean" />
<xs:element name="AppointmentReplyTime" type="xs:dateTime" />
<xs:element name="ResponseType" type="xs:unsignedInt" />
<xs:element name="DisallowNewTimeProposal" type="xs:boolean" />
<xs:element name="OnlineMeetingConfLink" type="xs:string" />
<xs:element name="OnlineMeetingExternalLink" type="xs:string" />
</xs:schema>

```

The portion of the **AirSyncBase** namespace that is used by the **Calendar** class is defined as follows. For details about the complete **AirSyncBase XSD**, see [\[MS-ASAIRS\]](#) section 2.2.

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:airsyncbase="AirSyncBase:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns="AirSyncBase:" targetNamespace="AirSyncBase:" elementFormDefault="qualified"
attributeFormDefault="unqualified">
    <xs:element name="Body"/>

```

```
<xs:element name="NativeBodyType" type="xs:unsignedByte"/>
</xs:schema>
```

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 2.2.3.135) in **ItemOperations** command requests ([\[MS-ASCMD\]](#) section 2.2.2.8.2)
- As an optional child element of the **itemoperations:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.1) in **ItemOperations** command responses ([\[MS-ASCMD\]](#) section 2.2.2.8.3)
- As an optional child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) in **Search** command responses ([\[MS-ASCMD\]](#) section 2.2.2.14.2)
- As an optional child element of the **airsync:ApplicationData** element ([\[MS-ASCMD\]](#) section 2.2.3.10) in **Sync** command requests ([\[MS-ASCMD\]](#) section 2.2.2.19.1)
- As an optional child element of the **airsync:ApplicationData** element ([\[MS-ASCMD\]](#) section 2.2.3.10) in **Sync** command responses ([\[MS-ASCMD\]](#) section 2.2.2.19.2)

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.

Element name	Description
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)	The status of the meeting .
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.
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.

Element name	Description
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.

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 **dateTime** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

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.

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 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 response.

The top-level **AppointmentReplyTime** element can be ghosted. For details about the use of ghosted properties, see [\[MS-ASCMD\]](#) section 2.2.3.154.

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. 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 2.2.3.154.

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
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 2.2.2.

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 2.2.3.154.

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 2.2.2.

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 <2> 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. Otherwise, the server responds with a status error 6 (conversion error).

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)
12	Gregorian (Transliterated French)
13	Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
14	Japanese Lunar
15	Chinese Lunar
16	Saka Era. Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
17	Chinese Lunar (Eto). Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
18	Korean Lunar (Eto). Reserved. MUST NOT be used. Status value 6 is returned by the server in a

Value	Meaning
	Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
19	Japanese Rokuyou Lunar. Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
20	Korean Lunar
21	Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
22	Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.
23	Um al-Qura. Reserved. MUST NOT be used. Status value 6 is returned by the server in a Sync response ([MS-ASCMD] section 2.2.2.19) when this value is used.

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

2.2.2.10 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 only be included in requests or responses when the **Type** element value is either 2 or 5. When a client request is issued containing the **DayOfMonth** element in other instances, the server responds with a status error 6 (conversion error).

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 **unsignedbyte** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

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
64	Saturday
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. When a client request is issued containing the **DayOfWeek** element in other instances, the server responds with a status error 6 (conversion error).

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**[<3>](#) 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 2.2.3.154.

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 **dateTime** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

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 a minimum of one **Email** child element per **Attendee** element.

A command request or response has a maximum of one **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. A server MUST recognize when this value is not formatted as specified in [\[MS-ASDTYPE\]](#) section 2.6.2, and MUST replace it with suitable placeholder text.

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 2.2.2.19.1). 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.

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 **dateTime** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

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 zero or more **Exception** child elements per **Exceptions** element.

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

- **Attendees** (section [2.2.2.4](#)): This element is optional.
- **Deleted** (section [2.2.2.14](#)): This element is optional.
- **ExceptionStartTime** (section [2.2.2.21](#)): One instance of this element is required.
- **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.
- **AppointmentReplyTime** (section [2.2.2.2](#)): This element is optional in command responses. It is not included in command requests.

- **ResponseType** (section [2.2.2.38](#)): This element is optional in command responses. It is not included in command requests.

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 a minimum of one **ExceptionStartTime** child element per **Exception** element.

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

The value of the **ExceptionStartTime** element is a **dateTime** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.22 FirstDayOfWeek

The **FirstDayOfWeek**<4> 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. The server MUST return a **FirstDayOfWeek** element when the value of the **Type** element (section [2.2.2.43](#)) is 1.

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

The value of 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. If the client uses a **Sync** command request to transmit a value that is not included in this table, the server MUST return protocol status error 6. **Sync** command status values are specified in [\[MS-ASCMD\]](#) section 2.2.3.152.16.

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 the **Interval** element is an **integer** with a maximum value of 999.

2.2.2.24 IsLeapMonth

The **IsLeapMonth** element [<5>](#) 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 2.2.3.154.

2.2.2.26 MeetingStatus

As a top-level element of the **Calendar** class, the **MeetingStatus** element is an optional element that specifies the status of the meeting. 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 [<6>](#) 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	Is not a meeting.
1	Is a meeting.
3	Meeting received.
5	Meeting is canceled.
7	Meeting is canceled and received.
9	Same as 1.
11	Same as 3.
13	Same as 5.
15	Same as 7.

The top-level **MeetingStatus** element can be ghosted. For details about the use of ghosted properties, see [\[MS-ASCMD\]](#) section 2.2.3.154.

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 only be included in requests or responses when the **Type** element value is either 5 or 6. When a client request is issued containing the **MonthOfYear** element in other instances, the server responds with a status error 6 (conversion error).

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 a minimum of one **Name** child element per **Attendee** element.

A command request or response has a maximum of 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. If both elements are included, then the server MUST respect the value of the **Occurrences** element and ignore the value of the **Until** element.

The value of the **Occurrences** element is an **integer**. The maximum value is 999.

2.2.2.31 OnlineMeetingConfLink

The **OnlineMeetingConfLink** element 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.

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

A command response contains, at most, one **OnlineMeetingConfLink** element per response.

The value of the **OnlineMeetingConfLink** element SHOULD be a GRUU as specified in [\[MS-SIPRE\]](#).

The **OnlineMeetingConfLink** element can be ghosted. For details about the use of ghosted properties, see [\[MS-ASCMD\]](#) section 2.2.3.154.

2.2.2.32 OnlineMeetingExternalLink

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

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

A command response contains, at most, one **OnlineMeetingExternalLink** element per response.

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

The value of the **OnlineMeetingExternalLink** element SHOULD be a valid URL.

The **OnlineMeetingExternalLink** element can be ghosted. For details about the use of ghosted properties, see [\[MS-ASCMD\]](#) section 2.2.3.154.

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 2.2.3.154.

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 2.2.3.154.

2.2.2.35 Recurrence

The **Recurrence** element is an optional **container** ([\[MS-ASDTYPE\]](#) section 2.2) element that specifies the recurrence information 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 **Recurrence** elements MUST NOT start on the same day.
- Multiple occurrences of the **Recurrence** element 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.

2.2.2.36 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.

2.2.2.37 ResponseRequested

The **ResponseRequested**<7> 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 2.2.3.154.

2.2.2.38 ResponseType

As a top-level element of the **Calendar** class, the **ResponseType**<8> 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**<9> 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 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 2.2.3.154.

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 2.2.2.19.1).

A **Sync** command request MUST contain one instance of the **StartTime** element if the **EndTime** element (section [2.2.2.18](#)) is included in the command request. If this element is not included in a **Sync** command request when an **EndTime** element is included in the request, then the server MUST return a protocol status error 6. **Sync** command status errors are defined in [\[MS-ASCMD\]](#) section 2.2.3.152.16.

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 **dateTime** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.41 Subject

As a top-level element of the **Calendar** class, the **Subject** element is a required 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 a minimum of one **Type** child element per **Recurrence** element.

A command request or response has a maximum of 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 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.

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. If both elements are included, then the server MUST respect the value of the **Occurrences** element and ignore the value of the **Until** element.

The value of the **Until** element is a **dateTime** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

2.2.2.46 WeekOfMonth

The **WeekOfMonth** element is a child element of the **Recurrence** element (section [2.2.2.35](#)) that specifies the week 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 **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 a client request is issued containing the **WeekOfMonth** element in other instances, the server responds with a status error 6 (conversion error).

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 2.2.2.19.1) 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 2.2.2.14.1) 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 2.2.2.8.2) to the server that contains one or more **itemoperations:Fetch** elements ([\[MS-ASCMD\]](#) section 2.2.3.60.1).

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 2.2.2.19.2). [\[MS-ASCMD\]](#) 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 2.2.2.8.2) that contains one or more **itemoperations:Fetch** elements ([\[MS-ASCMD\]](#) section 2.2.3.60.1) 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 2.2.3.135).

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 2.2.2.14.1) 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 2.2.2.19.1) 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 2.2.3.10) within either an **airsync:Add** element ([\[MS-ASCMD\]](#) section 2.2.3.7.2) or an **airsync:Change** element ([\[MS-ASCMD\]](#) section 2.2.3.23).

Top-level **Calendar** class elements can be transmitted as child elements of the **airsync:Supported** element ([\[MS-ASCMD\]](#) section 2.2.3.154) 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 2.2.3.154.

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.

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 2.2.2.19.1) to the server that contains a nonzero **airsync:SyncKey** element ([\[MS-ASCMD\]](#) section 2.2.3.156.4) value, the client uses the **airsync:Supported** element ([\[MS-ASCMD\]](#) section 2.2.3.154) 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 2.2.3.23).

For more details about ghosted properties, see [\[MS-ASCMD\]](#) section 2.2.3.154.

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 2.2.2.19.2).

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 2.2.2.14.2).

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).

3.2.5 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 [\[MS-ASCMD\]](#).

3.2.5.1 ItemOperations Command Response

When a client uses an **ItemOperations** command request ([\[MS-ASCMD\]](#) section 2.2.2.8.2), 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 2.2.2.8.3).

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 2.2.3.135) 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 2.2.3.118) 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 2.2.2.14.1), 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 2.2.2.14.2).

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 2.2.3.118) 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 2.2.2.19.1), 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 2.2.2.19.2).

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 2.2.3.10) within either an **airsync:Add** element ([\[MS-ASCMD\]](#) section 2.2.3.7.2) or an **airsync:Change** element ([\[MS-ASCMD\]](#) section 2.2.3.23) 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.

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 response ([\[MS-ASCMD\]](#) section 2.2.2.19.2), then any exceptions previously defined are unchanged. If a particular **Exception** element (section [2.2.2.19](#)) is excluded from a **Sync** command response, then that particular exception remains unchanged.

3.2.5.3.2 Indicating Deleted Elements in Exceptions

If an element 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 2.2.2.19.2). For example, if the **Location** element (section [2.2.2.25](#)) has been deleted for an exception, the server MUST send 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 2.2.2.19.1) to the server that contains a nonzero **airsync:SyncKey** element ([\[MS-ASCMD\]](#) section 2.2.3.156.4) 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 2.2.3.23). 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 2.2.3.154.

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 2.2.3.10) under the **airsync:Add** element ([\[MS-ASCMD\]](#) section 2.2.3.7.2) and the **airsync:Change** element ([\[MS-ASCMD\]](#) section 2.2.3.23) 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>4AEAAFAAYQBJAGkAZgBpAGMAIABTAHQAYQBAGQAYQByAGQAIABUAGkAbQBlAAAAA
            AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAsAAAABAIIAAAAAAAAAAAAAAAAFAAYQBJAGkAZgBpAGMAIABEAG
            EAeQBsAGkAZwBoAHQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACAAIAAAA
            AAAAAxP//w==</calendar:Timezone>
            <calendar:DtStamp>20081002T231357Z</calendar:DtStamp>
            <calendar:StartTime>20081010T190000Z</calendar:StartTime>
            <calendar:Subject>Lunch meeting</calendar:Subject>
          </ApplicationData>
          <calendar:UID>040000008200E00074C5B7101A82E00800000001027EAEDA124C90100000000000000100000
          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>
        </Change>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

```

    </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>4AEAFAAYQBJAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAAAFAAYQBJAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQAIABUAGk
AbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACAAIAAAAAAAAAAxP///w==</calendar:Timezone>
  <calendar:DtStamp>20081002T231335Z</calendar:DtStamp>
  <calendar:StartTime>20081013T170000Z</calendar:StartTime>
  <calendar:Subject>Dry Run of TechEd Presentation</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E008000000009003C9E1A924C9010000000000000001000000
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>4AEAFAAYQBJAGkAZgBpAGMAIABTAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAAsAAAABAAIAAAAAAAAAAAAAAAAAFAAYQBJAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQAIABUAGk
AbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAACAAIAAAAAAAAAAxP///w==</calendar:Timezone>
  <calendar:DtStamp>20081002T231639Z</calendar:DtStamp>
  <calendar:StartTime>20081013T190000Z</calendar:StartTime>
  <calendar:Subject>Team Meeting</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E0080000000060043DFCA924C9010000000000000001000000
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
bQBlACAABVAFMAIAAmACAAQwAAAAsAAAABAAIAAAAAAAAAAAAAAAACgARwBNAFQALQAwADgAogAwA
DAAKQAgAFAAYQBjAGkAZgBpAGMAIABUAGkAbQBlACAABVAFMAIAAmACAAQwAAAAMAAAACAAIAAA
AAAAAxP//w==</calendar:TimeZone>
  <calendar:DtStamp>20090415T165811Z</calendar:DtStamp>
  <calendar:StartTime>20090417T170000Z</calendar:StartTime>
  <calendar:Subject>Recurring appointment test</calendar:Subject>

<calendar:UID>040000008200E00074C5B7101A82E00800000000B0CD1F52EBBDC901000000000000
000100000000B05E442FCB2CA443BF3D99B51A729FE6</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>
  <airsynbase:Body>
    <airsynbase:Type>3</airsynbase:Type>
    <airsynbase:EstimatedDataSize>238</airsynbase:EstimatedDataSize>
    <airsynbase:Truncated>1</airsynbase:Truncated>
  </airsynbase: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>
  <airsynbase:NativeBodyType>3</airsynbase: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 2.2.2.19.2) 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 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
            TAHQAYQBuAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAA
            AAAAAAAAAAAAAAAAAAAAAoAAAAFAAIAAAAAAAAAAAA
            AAFAAYQBjAGkAZgBpAGMAIABEAGEAeQBsAGkAZwBoAHQA
            IABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA
            QAAAABAAIAAAAAAAAAAxP//w==</calendar:Timezone>
            <calendar:DtStamp>20051103T010509Z</calendar:DtStamp>
            <calendar:StartTime>20051103T230000Z</calendar:StartTime>
            <calendar:Subject>test meeting</calendar:Subject>
            <calendar:UID>040000008200E00074C5B7101A82E008000000
            0B0FD68A212E0C5010000000000000000100000008C46B9A4960AF
            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 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>4AEEAFAAYQBjAGkAZgBpAGMAIABTAHQAY
QBAGQAYQByAGQAIABUAGkAbQBlAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAoAAAAFAAIAAAAAAAAAAAAAAAAAFAAYQBjAGkAZgBpAGMAIA
BEAGEAeQBsAGkAZwBoAHQAIABUAGkAbQBlAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAAQAAAABAIAAAAAAAAAAAxP//w==
</calendar:Timezone>
            <calendar:DtStamp>20051103T013759Z</calendar:DtStamp>
            <calendar:StartTime>20051103T230000Z</calendar:StartTime>
            <calendar:Subject>test meeting</calendar:Subject>
            <calendar:UID>040000008200E00074C5B7101A82E0080000000B
0FD68A212E0C5010000000000000000100000008C46B9A4960AF
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>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

The information in this specification is applicable to the following 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

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 2.2.2.9:](#) The **CalendarType** element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

[<3> Section 2.2.2.15:](#) The **DisallowNewTimeProposal** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

[<4> Section 2.2.2.22:](#) The **FirstDayOfWeek** element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

[<5> Section 2.2.2.24:](#) The **IsLeapMonth** element is not supported when the MS-ASProtocolVersion header is set to 12.1.

[<6> 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.

[<7> Section 2.2.2.37:](#) The **ResponseRequested** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

[<8> Section 2.2.2.38:](#) The **ResponseType** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

[<9> Section 2.2.2.38:](#) The **ResponseType** element is not supported when the value of the MS-ASProtocolVersion header is set to 12.1.

7 Change Tracking

This section identifies changes that were made to the [MS-ASCAL] protocol document between the August 2011 and October 2011 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

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

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

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

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

- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.
- Content removed for template compliance.
- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated**.

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

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

The changes made to this document are listed in the following table. For more information, please contact protocol@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
2.2 Message Syntax	Updated the XML schema for the Calendar class to remove the duplicate definition of "xmlns:xs" within schema element.	N	Content updated.
2.2 Message Syntax	Updated the XML schema for the Calendar class to specify type="xs:string" for the Timezone element.	N	Content updated.
2.2 Message Syntax	Updated the XML schema for the Calendar class to remove the type attribute from the BusyStatus element, the Sensitivity element, the UID element, and the AttendeeType element.	N	Content updated.
2.2 Message Syntax	Updated the XML schema for the Calendar class to remove the minOccurs attribute from child elements of the schema element.	N	Content updated.
2.2 Message Syntax	Updated the XML schema for the Calendar class to remove the sequence element surrounding the child elements in the complexType for the Recurrence element.	N	Content updated.
2.2 Message Syntax	Updated the XML schema for the Calendar class to add a complexType element before the element within the Exceptions element.	N	Content updated.
2.2 Message Syntax	Updated the XML schema for the Calendar class to remove the Body element that is defined in the AirSyncBase namespace (and specified later in this section).	N	Content updated.

8 Index

A

Abstract data model
[client](#) 36
[server](#) 38
[Applicability](#) 8

C

[Capability negotiation](#) 8
[Change tracking](#) 49
Client
[abstract data model](#) 36
[initialization](#) 36
[message processing](#) 37
[other local events](#) 38
[sequencing rules](#) 37
[timer events](#) 38
[timers](#) 36

D

Data model - abstract
[client](#) 36
[server](#) 38

E

Elements
[AllDayEvent](#) 17
[AppointmentReplyTime](#) 18
[Attendee](#) 18
[Attendees](#) 19
[AttendeeStatus](#) 19
[AttendeeType](#) 19
[Body](#) 20
[BusyStatus](#) 20
[CalendarType](#) 21
[Categories](#) 22
[Category](#) 22
[DayOfMonth](#) 22
[DayOfWeek](#) 23
[Deleted](#) 23
[DisallowNewTimeProposal](#) 24
[DtStamp](#) 24
[Email](#) 24
[EndTime](#) 25
[Exception](#) 25
[Exceptions](#) 26
[ExceptionStartTime](#) 26
[FirstDayOfWeek](#) 26
[Interval](#) 27
[IsLeapMonth](#) 27
[Location](#) 28
[MeetingStatus](#) 28
[MonthOfYear](#) 29
[Name](#) 29
[NativeBodyType](#) 29

[Occurrences](#) 29
[OnlineMeetingConfLink](#) 30
[OnlineMeetingExternalLink](#) 30
[OrganizerEmail](#) 30
[OrganizerName](#) 30
[Recurrence](#) 31
[Reminder](#) 31
[ResponseRequested](#) 32
[ResponseType](#) 32
[Sensitivity](#) 32
[StartTime](#) 33
[Subject](#) 33
[TimeZone](#) 34
[Type](#) 34
[UID](#) 34
[Until](#) 34
[WeekOfMonth](#) 35
[Elements message](#) 14
Examples
[setting attendee status from the server](#) 44
[synchronizing calendar data](#) 41
[synchronizing recurring appointments with exceptions](#) 43

F

[Fields - vendor-extensible](#) 8

G

[Glossary](#) 6

I

[Implementer - security considerations](#) 47
[Index of security parameters](#) 47
[Informative references](#) 7
Initialization
[client](#) 36
[server](#) 38
[Introduction](#) 6

M

Message processing
[client](#) 37
[server](#) 39
Messages
[Elements](#) 14
[Namespaces](#) 14
[syntax](#) 9
[transport](#) 9

N

[Namespaces message](#) 14
[Normative references](#) 6

O

Other local events

[client](#) 38

[server](#) 40

[Overview \(synopsis\)](#) 7

P

[Parameters - security index](#) 47

[Preconditions](#) 7

[Prerequisites](#) 7

[Product behavior](#) 48

R

References

[informative](#) 7

[normative](#) 6

[Relationship to other protocols](#) 7

S

Security

[implementer considerations](#) 47

[parameter index](#) 47

Sequencing rules

[client](#) 37

[server](#) 39

Server

[abstract data model](#) 38

[initialization](#) 38

[message processing](#) 39

[other local events](#) 40

[sequencing rules](#) 39

[timer events](#) 40

[timers](#) 38

[Standards assignments](#) 8

T

Timer events

[client](#) 38

[server](#) 40

Timers

[client](#) 36

[server](#) 38

[Tracking changes](#) 49

[Transport](#) 9

V

[Vendor-extensible fields](#) 8

[Versioning](#) 8