

[MS-ASEMAIL]: ActiveSync E-Mail Class Protocol Specification

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1 Introduction

This document specifies the XML representation of e-mail data sent or received on mobile devices that communicate by using the ActiveSync protocols.

1.1 Glossary

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

class
collection
Coordinated Universal Time (UTC)
message database (MDB)
WAP Binary XML (WBXML)

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

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

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

[MS-ASDTYPE] Microsoft Corporation, "ActiveSync Data Type Protocol Specification", December 2008.

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

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

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

[XML] Bray, T., et al., "Extensible Markup Language (XML) 1.0 (Fourth Edition)", <http://www.w3.org/TR/REC-xml/>.

1.2.2 Informative References

None.

1.3 Protocol Overview

This document specifies the XML representation of e-mail data sent or received on mobile devices that communicate by using the ActiveSync protocols. E-mail data is included in protocol command requests when e-mail data is being sent from the client to the server, and is included in protocol command responses when e-mail data is retrieved from the server. E-mail data includes header information such as to, from, and subject, as well as body, attachment, and meeting request information, and information about flags set on e-mail messages.

1.4 Relationship to Other Protocols

This document specifies the XML representation of e-mail message data that is sent and received by the protocol commands, as specified in [MS-ASCMD].

All data types in this document conform to the data type definitions specified in [MS-ASDTYPE].

Estimated data size, body content, and data truncation information about e-mail messages are not part of the E-mail **class** data. Instead, that data is contained in the AirSyncBase namespace, as specified in [MS-ASAIRS].

The code page used to encode E-mail class data is specified in [MS-ASWBXML].

2 Messages

2.1 Transport

The E-mail **class** consists of a series of XML types and elements that are embedded inside of a command request or response. Command requests are issued by the client as needed. Command responses are issued by the server after performing the command operations requested by the client in the command request.

2.2 Message Syntax

The markup **MUST** be well-formed XML, as specified in [XML], using the commands specified in [MS-ASCMD].

The XML markup that constitutes the request body or the response body is transmitted between the client and server using WAP Binary XML (WBXML) [MS-ASWBXML].

The XML schema definition for the E-mail **class** is as follows. This schema represents the full set of data returned by the **Sync** command.

```
<?xml version="1.0" ?>
<xs:schema xmlns:tns="EMAIL:" attributeFormDefault="unqualified"
elementFormDefault="qualified"

targetNamespace="EMAIL:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:A="AirSyncBase:">
  <xs:import namespace="AirSyncBase" />
  <xs:element name="To" type="xs:string" />
  <xs:element name="Cc" type="xs:string" />
  <xs:element name="From" type="xs:string" />
  <xs:element name="Reply-To" type="xs:string" />
  <xs:element name="Subject" type="xs:string" />
  <xs:element name="DateReceived" type="xs:dateTime" />
  <xs:element name="DisplayTo" type="xs:string" />
  <xs:element name="ThreadTopic" type="xs:string" />
  <xs:element name="Importance" type="xs:unsignedByte" />
  <xs:element name="Read" type="xs:unsignedByte" />
  <xs:element name="NativeBodyType" type="A:NativeBodyType" />
  <xs:element name="Body" type="A:Body" />
  <xs:element name="Flag">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="Subject" type="xs:string" />
        <xs:element name="Status" type="xs:unsignedByte" />
        <xs:element name="FlagType" type="xs:string" />
        <xs:element name="DateCompleted" type="xs:dateTime" />
        <xs:element name="CompleteTime" type="xs:dateTime" />
        <xs:element name="StartDate" type="xs:dateTime" />
        <xs:element name="DueDate" type="xs:dateTime" />
        <xs:element name="UTCStartDate" type="xs:dateTime" />
        <xs:element name="UTCEndDate" type="xs:dateTime" />
        <xs:element name="ReminderSet"
type="xs:unsignedByte" />
        <xs:element name="ReminderTime" type="xs:dateTime" />
        <xs:element name="OrdinalDate" type="xs:dateTime" />
        <xs:element name="SubOrdinalDate"
type="xs:dateTime" />
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:element name="MessageClass" type="xs:string" />
  <xs:element name="AttRemoved" type="xs:string" />
  <xs:element name="MIMETruncated" type="xs:unsignedByte" />
  <xs:element name="MIMEData" type="xs:string" />
  <xs:element name="MIMESize" type="xs:unsignedByte" />
  <xs:element name="MessageClass" type="xs:string" />
```

```

<xs:element name="InternetCPID" type="xs:string" />
<xs:element name="Attachments" type="A:Attachments" />
<xs:element name="MeetingRequest">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="AllDayEvent"
type="xs:unsignedByte" />
      <xs:element name="Categories">
        <xs:complexType>
          <xs:sequence>
            <xs:element maxOccurs="unbounded"
name="Category" type="xs:string" />
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="StartTime" type="xs:dateTime" />
      <xs:element name="DtStamp" type="xs:dateTime" />
      <xs:element name="EndTime" type="xs:dateTime" />
      <xs:element name="InstanceType"
type="xs:unsignedByte" />
      <xs:element minOccurs="0" name="Location"
type="xs:string" />
      <xs:element name="Organizer" type="xs:string" />
      <xs:element minOccurs="0" name="RecurrenceId"
type="xs:dateTime" />
      <xs:element name="Reminder" type="xs:unsignedShort"
/>
      <xs:element name="ResponseRequested"
type="xs:unsignedByte" />
      <xs:element name="Recurrences">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Recurrence">
              <xs:complexType>
                <xs:sequence>
                  <xs:element
name="Type" type="xs:unsignedByte" />
                  <xs:element
name="Until" type="xs:string" />
                  <xs:element
name="Occurrences" type="xs:unsignedByte" />
                  <xs:element
name="Interval" type="xs:unsignedByte" />
                  <xs:element
name="DayOfWeek" type="xs:unsignedByte" />
                  <xs:element
name="DayOfMonth" type="xs:unsignedByte" />
                  <xs:element
name="WeekOfMonth" type="xs:unsignedByte" />
                  <xs:element
name="WeekOfMonth" type="xs:unsignedByte" />
                  <xs:element
name="MonthOfYear" type="xs:unsignedByte" />
                </xs:sequence>
              </xs:complexType>
            </xs:element>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```



```

        </xs:complexType>
        </xs:element>
        </xs:sequence>
        </xs:complexType>
        </xs:element>
        <xs:element name="Sensitivity"
type="xs:unsignedByte" />
        <xs:element name="BusyStatus"
type="xs:unsignedByte" />
        <xs:element name="TimeZone" type="xs:string" />
        <xs:element name="GlobalObjId" type="xs:string" />
        </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:schema>

```

2.2.1 Namespaces

This specification defines and references the following XML namespaces.

Prefix	Reference
EMAIL:	[MS-ASEMAIL]
A:	[MS-ASAIRS]

2.2.2 Simple Types

This specification does not define any common XML schema simple type definitions.

2.2.3 Complex Types

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

Complex Type	Description
Attachments	The collection of Attachment elements.
Attachments.Attachment	The e-mail attachment.
Body	A description of the body text, along with its data.
Flag	The flag associated with the item, along with its current status.
MeetingRequest	A meeting request accompanying an e-mail message.
MeetingRequest.Categories	A collection of Category elements belonging to a MeetingRequest.
MeetingRequest.Recurrences	A collection of Recurrence elements.

MeetingRequest.Recurrences.Recurrence	A collection of Recurrence elements that describe when and how often this meeting recurs.
---------------------------------------	--

2.2.3.1 Attachments

The **Attachments** type is an optional **container** ([MS-ASDTYPE] section 2.8) type that contains a collection of **Attachment** elements.

2.2.3.2 Attachments.Attachment

The **Attachment** type is a **container** ([MS-ASDTYPE] section 2.8) type that represents an e-mail attachment.

If an **Attachments** type is defined, it **MUST** contain one or more instances of this type.

The **Attachment** type is part of the AirSyncBase namespace, and is further specified in [MS-ASAIRS].

2.2.3.3 Body

The **Body** type is an optional **container** ([MS-ASDTYPE] section 2.8) type that contains the message text of the e-mail, along with associated message body data.

The **Body** type is part of the AirSyncBase namespace, and is further specified in [MS-ASAIRS].

2.2.3.4 Flag

The **Flag** type is an optional **container** ([MS-ASDTYPE] section 2.8) type that describes the flag associated with this item, along with its current status.

2.2.3.5 MeetingRequest

The **MeetingRequest** type is an optional **container** ([MS-ASDTYPE] section 2.8) type that signifies that this e-mail meeting corresponds to a meeting request.

2.2.3.6 MeetingRequest.Categories

The **MeetingRequest.Categories** type is a **container** ([MS-ASDTYPE] section 2.8) type that contains the user-selected category for this message.

The **MeetingRequest.Categories** type is an optional child type of the **MeetingRequest** type.

2.2.3.7 MeetingRequest.Recurrences

The **MeetingRequest.Recurrences** type is a **container** ([MS-ASDTYPE] section 2.8) type that contains a **collection** of **Recurrence** elements.

The **MeetingRequest.Recurrences** type is an optional child type of the **MeetingRequest** type.

2.2.3.8 MeetingRequest.Recurrences.Recurrence

The **MeetingRequest.Recurrences.Recurrence** type is a **container** ([MS-ASDTYPE] section 2.8) type that describes when and how often this meeting request recurs.

If a **MeetingRequest.Recurrences** type is defined, then it **MUST** contain one or more instances of this type.

2.2.4 Elements

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

E-mail class elements **MUST** not have child elements in the command request or response.

Element	Description
To	The e-mail address of the sender.
Cc	The list of carbon-copy recipients.
ContentClass	The content class of the data.
From	The e-mail address of the individual who sent the message.
Reply-To	The e-mail address to which replies will be addressed by default.
Subject	The subject of the e-mail message.
DateReceived	The date and time that the message was received on the server.
DisplayTo	The names of the primary recipients of the message.

ThreadTopic	The topic used in conversation reading.
Importance	The importance of the message, as determined by the sender.
Read	Specifies whether the message has been read.
NativeBodyType	The format in which the item is stored on the server.
Flag.Subject	The subject of the flag as it would appear in a task list.
Flag.Status	The current status of the flag.
Flag.FlagType	The value of the Flag To: follow up field.
Flag.DateCompleted	The date on which the flagged item was completed.
Flag.CompleteTime	The time at which the flagged item was marked as finished.
Flag.StartDate	The start date of the flagged item.
Flag.DueDate	The due date of the flagged item.
Flag.UTCStartDate	The Coordinated Universal Time (UTC) value of the local StartDate .
Flag.UTCEndDate	The UTC value of the local DueDate .
Flag.ReminderSet	Identifies whether a reminder has been set for this flagged item.
Flag.ReminderTime	The date and time that the reminder is supposed to occur.
Flag.OrdinalDate	The time at which the client set the flag.
Flag.SubOrdinalDate	A string used to sort items.
MessageClass	The type of e-mail message.
MIMETruncated	Specifies whether MIMEData element data was truncated.
MIMEData	The raw MIME data of the e-mail message.

MIMESize	The complete size, in characters, of the MIME message that is contained in the MIMEData element.
InternetCPID	The original code page ID from the MIME message.
Attachments.Attachment.DisplayName	The name of the attachment file as displayed to the user.
MeetingRequest.AllDayEvent	Indicates whether the calendar item is an all day event.
MeetingRequest.Categories.Category	A named label for the MeetingRequest element.
MeetingRequest.StartTime	The date and time that the MeetingRequest element starts.
MeetingRequest.DtStamp	The date and time that the calendar item was created.
MeetingRequest.EndTime	The date and time that the MeetingRequest element ends.
MeetingRequest.InstanceType	The type of calendar item.
MeetingRequest.Location	The location for the calendar item.
MeetingRequest.Organizer	The SMTP e-mail alias of the meeting organizer.
MeetingRequest.RecurrenceId	A specific instance of a recurring calendar item.
MeetingRequest.Reminder	The number of seconds prior to the calendar item's start time that a reminder is displayed.
MeetingRequest.ResponseRequested	Indicates whether the originator of the meeting has requested a response.
MeetingRequest.Recurrences.Recurrence.Type	The recurrence type.
MeetingRequest.Recurrences.Recurrence.Until	The end time of a series of recurrence items.
MeetingRequest.Recurrences.Recurrence.Occurrences	The number of occurrences before the series ends.
MeetingRequest.Recurrences.Recurrence.Interval	The interval between recurrences.
MeetingRequest.Recurrences.Recurrence.DayOfWeek	The day of the week.
MeetingRequest.Recurrences.Recurrence.DayOfMonth	The day of the month.
MeetingRequest.Recurrences.Recurrence.WeekOfMonth	The week of the month.

MeetingRequest.Recurrences.Recurrence.MonthOfYear	The month of the year.
MeetingRequest.Recurrences.Recurrence.Sensitivity	The sensitivity level of the meeting request.
MeetingRequest.Recurrences.Recurrence.BusyStatus	Specifies whether the recipient of this meeting request is busy at the specified time.
MeetingRequest.Recurrences.Recurrence.TimeZone	The time zone where the calendar item occurs.
MeetingRequest.Recurrences.Recurrence.GlobalObjId	The Base64-encoded global object ID for the meeting request.

2.2.4.1 To

The **To** element is an optional element that specifies the e-mail address of the sender.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by commas

2.2.4.2 Cc

The **Cc** element is an optional element that specifies the list of carbon-copied recipients of this message.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by commas

2.2.4.3 ContentClass

The **ContentClass** element is an optional element that specifies the content **class** of the data. For e-mail messages, the value of this element **MUST** be set to “urn:content-classes:message”.

2.2.4.4 From

The **From** element is an optional element that specifies the e-mail address of the individual who sent this message.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by commas

2.2.4.5 Reply-To

The **Reply-To** element is an optional element that specifies the e-mail address to which replies will be addressed by default.

The value of this element contains one or more e-mail addresses. If there are multiple e-mail addresses, then they are separated by commas

2.2.4.6 Subject

The **Subject** element is an optional element that specifies the subject of the e-mail message.

2.2.4.7 DateReceived

The **DateReceived** element is an optional element that specifies the date and time when this message was received by the current recipient.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.8 DisplayTo

The **DisplayTo** element is an optional element that specifies the e-mail addresses of the primary recipients of this message.

2.2.4.9 ThreadTopic

The **ThreadTopic** element is an optional element that specifies the topic used for conversation threading.

2.2.4.10 Importance

The **Importance** element is an optional element that specifies the importance of the message, as determined by the sender.

The value of this element MUST be one of the following.

Value	Meaning
0	Low importance
1	Normal importance
2	High importance

If this element is omitted, then clients MUST assume 1 as the default.

2.2.4.11 Read

The **Read** element is an optional element that specifies whether the e-mail message has been viewed by the current recipient.

The value of this element MUST be a **boolean** value, as specified in [MS-ASDTYPE] section 2.3.

2.2.4.12 NativeBodyType

The **NativeBodyType** element is an optional element that specifies how the e-mail message is stored on the server.

For more details about the **NativeBodyType** element, see [MS-ASAIRS].

2.2.4.13 Flag.Subject

The **Flag.Subject** element is an optional child element of the **Flag** type that specifies the subject of the flag.

The client or server SHOULD set the value of this element to the subject of the message when an item is flagged.<1>

2.2.4.14 Flag.Status

The **Flag.Status** element is an optional child element of the **Flag** type that specifies the current status of the flag.

The value of this element MUST be one of the following.

Value	Meaning
Null	Clear the flag
0	Clear the flag
1	Status is set to complete
2	Status is set to active

2.2.4.15 Flag.FlagType

The **Flag.FlagType** element is an optional child element of the **Flag** type that specifies the flag type.

Flag.FlagType is not required if the e-mail message is a meeting request or response.

New flags MUST always set this field to “Follow up”.

2.2.4.16 Flag.DateCompleted

The **Flag.DateCompleted** element is an optional child element of the **Flag** type that identifies the date on which a flagged item was completed.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.17 Flag.CompleteTime

The **Flag.CompleteTime** element is an optional element of the **Flag** type that identifies the time at which a flagged item was marked as finished.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.18 Flag.StartDate

The **Flag.StartDate** element is an optional child element of the **Flag** type that specifies when this flagged item was begun.

When a flag is being updated, **Flag.StartDate** MUST NOT occur after **Flag.DueDate**.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.19 Flag.DueDate

The **Flag.DueDate** element is an optional child element of the **Flag** type that specifies when this flagged item is due.

When a flag is being updated, **Flag.DueDate** MUST NOT occur before **Flag.StartDate**.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.20 Flag.UTCStartDate

The **Flag.UTCStartDate** element is an optional child element of the **Flag** type that contains the **UTC** value of the local **Flag.StartDate**.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.21 Flag.UTCEndDate

The **Flag.UTCEndDate** element is an optional child element of the **Flag** type that contains the **UTC** value of local **Flag.DueDate**.

The value of this element MUST be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.22 **Flag.ReminderSet**

The **Flag.ReminderSet** element is an optional child element of the **Flag** type that is **TRUE** (1) if a reminder has been set for this task; otherwise it is set to **FALSE** (0).

A reminder **MUST NOT** be set if **Flag.FlagType** is set to a meeting request.

The value of this element **MUST** be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.23 **Flag.ReminderTime**

The **Flag.ReminderTime** element is an optional child element of the **Flag** type that identifies the date and time that the reminder is supposed to occur.

The value of this element **MUST** be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.24 **Flag.OrdinalDate**

The **Flag.OrdinalDate** element is an optional child element of the **Flag** type that identifies the time at which the client set the flag.<2>

The value of this element **MUST** be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.25 **Flag.SubOrdinalDate**

The **Flag.SubOrdinalDate** element is an optional child element of the **Flag** type that is used for sorting. The value can be any string and can be used for additional sorting if there are duplicate **OrdinalDates**.<3>

The value of this element **MUST** be a **date/time** value, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.26 **MessageClass**

The **MessageClass** element is an optional element that specifies the message **class** of this e-mail message.

The value of the **MessageClass** element **SHOULD** be one of the following values.

Value	Meaning
IPM.Note	Normal e-mail message
IPM.Note.Rules.OofTemplate.Microsoft	Out-of-office message

IPM.Note.SMIME	Secure MIME (S/MIME) secured message
IPM.Note.SMIME.MultipartSigned	S/MIME signed message
IPM.Schedule.Meeting.Request	Message containing a meeting request
IPM.Schedule.Meeting.Canceled	Notification of a canceled meeting
IPM.Schedule.Meeting.Resp.Pos	Accepted meeting request
IPM.Schedule.Meeting.Resp.Tent	Tentatively accepted meeting request
IPM.Schedule.Meeting.Resp.Neg	Declined meeting request
IPM.Post	Post

In addition, certain administrative messages have message classes that are derived from the message classes in the preceding table. The format is a prefix of **REPORT** and a suffix that indicates the type of report. The value of the **MessageClass** element MAY be one of the following values.

MessageClass	Description
REPORT.<message class>.DR	Deliver receipt
REPORT.<message class>.NDR	Non-delivery receipt
REPORT.<message class>.IPNRN	Message read report
REPORT.<message class>.IPNNRN	Message not read report

For example, a standard message non-delivery receipt is **REPORT.IPM.Note.NDR** and a delivery receipt for a meeting is **REPORT.IPM.Schedule.Meeting.Request.DR**.

2.2.4.27 MIMETruncated

The **MIMETruncated** element is an optional element that specifies whether the **MIMEData** element has been truncated.

If this element is not included, then no truncation of MIME content has occurred.

The value of this element MUST be a **boolean** value, as specified in [MS-ASDTYPE] section 2.3.

2.2.4.28 MIMEData

The **MIMEData** element is an optional element that contains the raw MIME data of this e-mail message.

2.2.4.29 **MIMESize**

The **MIMESize** element is an optional element that specifies the size of the raw MIME data for this e-mail message.

This element **MUST** be returned if the client, using the appropriate commands and syntax defined in [MS-ASCMD], has notified the server that the client has MIME support enabled. The value is the estimated size, in bytes, of the raw MIME data contained in **MIMEData**.

2.2.4.30 **InternetCPID**

The **InternetCPID** element is a required element that contains the original code page ID from the MIME message.

2.2.4.31 **Attachments.Attachment.DisplayName**

The **Attachments.Attachment.DisplayName** element is an optional child element of the **Attachment** type that specifies the name of the attachment file as displayed to the user.

2.2.4.32 **MeetingRequest.AllDayEvent**

The **MeetingRequest.AllDayEvent** element is a required child element of the **MeetingRequest** type that specifies whether this meeting requests lasts the entire day.

If the value of this element is set to **TRUE**, then the attached meeting request is an all day event.

The value of this element **MUST** be a **boolean** value, as specified in [MS-ASDTYPE] section 2.3.

2.2.4.33 **MeetingRequest.Categories.Category**

The **MeetingRequest.Categories.Category** element is an optional child element of the **Categories** type that specifies the user-selected category for this message.

If a **Categories** element is defined, then it **MUST** contain one or more **Category** elements. The names of the categories are not fixed, and custom category names are allowed.

2.2.4.34 **MeetingRequest.StartTime**

The **MeetingRequest.StartTime** element is a required child element of the **MeetingRequest** type that specifies when this meeting begins.

The value of this element **MUST** be a **date/time** format, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.35 MeetingRequest.DtStamp

The **MeetingRequest.DtStamp** element is a required child element of the **MeetingRequest** type that specifies the date and time this calendar item was created.

The value of this element MUST be in **date/time** format, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.36 MeetingRequest.EndTime

The **MeetingRequest.EndTime** element is a required child element of the **MeetingRequest** type that specifies the date and time when the meeting ends.

The value of this element MUST be in **date/time** format, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.37 MeetingRequest.InstanceType

The **MeetingRequest.InstanceType** element is a required child element of the **MeetingRequest** type that specifies whether this is a single or recurring appointment.

The value of this element is an enumeration which MUST be one of the following values:

Value	Meaning
0	Single appointment.
1	Master recurring appointment.
2	Single instance of a recurring appointment.
3	Exception to a recurring appointment.

2.2.4.38 MeetingRequest.Location

The **MeetingRequest.Location** element is an optional child element of the **MeetingRequest** type that specifies where this meeting will be held.

The maximum character length of this element's value MUST be 1,023 characters.

2.2.4.39 MeetingRequest.Organizer

The **MeetingRequest.Organizer** element is an optional child element of the **MeetingRequest** type that specifies who organized this meeting.

The value of this element MUST be an e-mail address as specified in [MS-ASDTYPE] section 2.5.

2.2.4.40 MeetingRequest.RecurrenceId

The **MeetingRequest.RecurrenceId** element is an optional child element of the **MeetingRequest** type that specifies the date and time of this recurrence of a recurring meeting.

This element **MUST** be included if this is a recurring meeting or an exception to a recurring meeting.

The value of this element **MUST** be the date and time corresponding to this instance of a recurring item.

The value of this element **MUST** be formatted in **date/time** format, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.41 MeetingRequest.Reminder

The **MeetingRequest.Reminder** element is an optional child element of the **MeetingRequest** type that specifies the number of seconds prior to the calendar item's start time that a reminder will be displayed.

2.2.4.42 MeetingRequest.ResponseRequested

The **MeetingRequest.ResponseRequested** element is an optional child element of the **MeetingRequest** type that specified whether the organizer has requested a response to this meeting request.

2.2.4.43 MeetingRequest.Recurrences.Recurrence.Type

The **MeetingRequest.Recurrences.Recurrence.Type** element is a required child element of the **Recurrence** type that specifies how this meeting recurs.

The value of this element **MUST** be one of the following:

Value	Meaning
0	Rekurs daily.
1	Rekurs weekly.
2	Rekurs monthly.
3	Rekurs monthly on the nth day of the month.
5	Rekurs yearly.
6	Rekurs yearly on the nth day of the year.

2.2.4.44 MeetingRequest.Recurrences.Recurrence.Until

The **MeetingRequest.Recurrences.Recurrence.Until** element is a required child element of the **Recurrence** type that specifies the end date and time of a recurring meeting.

The value of this element MUST be in **date/time** format, as specified in [MS-ASDTYPE] section 2.6.

2.2.4.45 MeetingRequest.Recurrences.Recurrence.Occurrences

The **MeetingRequest.Recurrences.Recurrence.Occurrences** element is a required child element of the **Recurrence** type that specifies the number of occurrences before the series ends.

2.2.4.46 MeetingRequest.Recurrences.Recurrence.Interval

The **MeetingRequest.Recurrences.Recurrence.Interval** element is a required child element of the **Recurrence** type that specifies the interval between recurrences.

2.2.4.47 MeetingRequest.Recurrences.Recurrence.DayOfWeek

The **MeetingRequest.Recurrences.Recurrence.DayOfWeek** element is an optional child element of the **Recurrence** type that specifies the day of the week on which this meeting recurs.

This element is required when the **MeetingRequest.Recurrences.Recurrence.Type** element is set to 1, 2 or 6.

The value of this element MUST be one of the following.

Value	Meaning
1	Sunday
2	Monday
4	Tuesday
8	Wednesday
16	Thursday
32	Friday
64	Saturday

These values can be added together to specify that the meeting occurs on more than one day of the week.

2.2.4.48 MeetingRequest.Recurrences.Recurrence.DayOfMonth

The **MeetingRequest.Recurrences.Recurrence.DayOfMonth** element is an optional child element of the **Recurrence** type that specifies the day of the month on which this meeting recurs.

This element is required when the **MeetingRequest.Recurrences.Recurrence.Type** element is set to 3 or 6.

2.2.4.49 MeetingRequest.Recurrences.Recurrence.WeekOfMonth

The **MeetingRequest.Recurrences.Recurrence.DayOfMonth** element is an optional child element of the **Recurrence** type that specifies the week of the month in which this meeting recurs.

This element is required when the **MeetingRequest.Recurrences.Recurrence.Type** element is set to 5.

2.2.4.50 MeetingRequest.Recurrences.Recurrence.MonthOfYear

The **MeetingRequest.Recurrences.Recurrence.MonthOfYear** element is an optional child element of the **Recurrence** type that specifies the month of the year in which this meeting recurs.

This element is required when the **MeetingRequest.Recurrences.Recurrence.Type** element is set to 6.

2.2.4.51 MeetingRequest.Recurrences.Recurrence.Sensitivity

The **MeetingRequest.Recurrences.Recurrence.Sensitivity** element is an optional child element of the **Recurrence** type that specifies the sensitivity level of the meeting request.

The value of this element MUST be one of the following values.

Value	Meaning
0	Normal
1	Personal
2	Private
3	Confidential

If this element is missing, then a default of 0 MUST be assumed.

2.2.4.52 MeetingRequest.Recurrences.Recurrence.BusyStatus

The **MeetingRequest.Recurrences.Recurrence.BusyStatus** element is an optional child element of the **Recurrence** type that specifies whether the recipient of this meeting request is busy at the specified time.

The value of this element MUST be one of the following values.

Value	Meaning
0	Busy
1	Free
2	Tentative

3	Out of Office (OOF)
---	---------------------

If this element is missing, then a default of 1 MUST be assumed.

2.2.4.53 MeetingRequest.Recurrences.Recurrence.TimeZone

The **MeetingRequest.Recurrences.Recurrence.TimeZone** element is a required child element of the **Recurrence** type that specifies the time zone where the calendar item is recurring.

The value of this element MUST be a **timezone** type, as specified in [MS-ASDTYPE] section 2.7.

2.2.4.54 MeetingRequest.Recurrences.Recurrence.GlobalObjId

The **MeetingRequest.Recurrences.Recurrence.GlobalObjId** element is a required child element of the **Recurrence** type that specifies the base64-encoded global object ID for the meeting request.

2.2.5 Attributes

This specification does not define any common XML schema attribute definitions.

2.2.6 Groups

This specification does not define any common XML schema group definitions.

2.2.7 Attribute Groups

This specification does not define any common XML schema attribute group definitions.

2.2.8 Commands

Commands that send and receive E-mail class data are specified in section 3.1.5.

3 Protocol Details

3.1 Client and Server 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.

The E-mail **class** is a structured XML text block that adheres to the XML schema definition specified in section 2.2. It is returned by the server as part of a full XML response to the client commands specified in section 3.1.5.

The server can return zero or more E-mail class blocks in its response, depending on how many e-mail items match the criteria specified in the client command request.

The server **MUST** return an E-mail class XML block for every task that matches the criteria specified in the client command request.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Synchronizing E-mail Between Client and Server

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

3.1.4.2 Searching E-mail

A client searches a **message database (MDB)** for E-mail **class** data by sending a **Search** command request to the server. The server responds with a **Search** command response.

3.1.4.3 Retrieving Individual E-mail

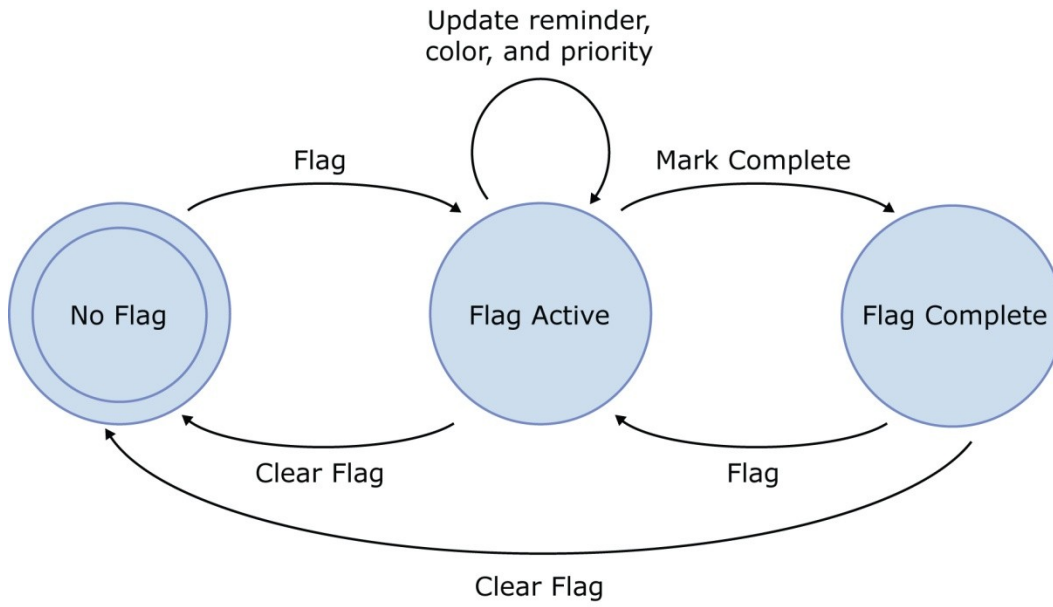
E-mail data for one or more individual e-mail items is requested by the client using an **ItemOperations** command request, which is a wrapper for the **Fetch** command. An **ItemOperations** command can contain multiple **Fetch** commands. The server responds with an **ItemOperations** command response.

3.1.4.4 Updating Flags on the Server

Basic flagging enables clients to flag e-mail messages, mark flags as complete, or clear flags.

The following figure shows the life cycle of a flag.

Figure 1: Flag life cycle



Task integration with flagging is optional for the mobile client, and layers cleanly on top of the simple cycle.

3.1.4.4.1 Flag Actions

For every flag update that is sent from the client, the server can update the flag on the item using the **Change** element of the **Sync** command. The server uses the following logic to determine which flag action (clear, set, mark complete) to invoke when updating flag status based on the value of the **Status** element, as specified in section 2.2.4.17.

Action	Required Properties from Device
Flag an item (basic)	Status = 2 FlagType = 'for follow-up' Local and UTC StartDate Local and UTC DueDate
Flag an item (task flagging)	Status = 2 Subject = <user defined> FlagType = follow-up Local and UTC StartDate Local and UTC DueDate ReminderSet ReminderTime
Mark an item complete (basic)	Status = 1 CompleteTime DateCompleted
Mark an item complete (task flagging)	Status = 1

Action	Required Properties from Device
	CompleteTime DateCompleted
Clearing the flag on an item	Flag node empty
Clearing the flag on an item (task flagging)	Flag node empty
Update the flag metadata (basic)	All updated properties
Update flag metadata (task flagging)	All updated properties

If neither **StartDate**, **DueDate**, **UtcStartDate**, nor **UtcDueDate** exist in the request, then it is valid to accept O11 flag.

DateCompleted is required to accept O11 flag.

FlagType is not required if the item is a meeting request or response message.

A reminder cannot be added to a meeting request flag.

3.1.4.4.2 *Change Tracking Semantics for Flagging Properties*

The **Flag** elements are tracked as a block. A server change to any **Flag** child element on the item **MUST** result in the whole **Flag** block being sent to the client in the **Change** element of the **Sync** command.

Implicit deletes are assumed when the change is applied based on the properties.

3.1.4.5 **Sending Flagged Changes to the Client**

A server can partition e-mail changes into one or more of the following buckets:

- Changes to the **Read** flag
- Changes to **Flag** elements
- Changes to other e-mail elements, such as **Subject**
- Changes to non-protocol properties

If only the **Read** element or any of the **Flag** elements have changed, then the server can send just these updates, without sending the full E-mail **class** element again. If any other element of the e-mail message has changed, then the server **MUST** send the entire message to the client.

The following matrix captures what the server **MUST** send to the client based on which of the previous categories characterize the change.

Read Flag	Flagging Properties	Other ActiveSync Protocol Properties	Non-ActiveSync protocol properties	Action
N	N	N	N	Send nothing to client
N	N	N	Y	Send nothing to client
N	N	Y	N	Send full item Change to client
N	N	Y	Y	Send full item Change to client
N	Y	N	N	Send flag block only
N	Y	N	Y	Send flag block only
N	Y	Y	N	Send full item Change to client
N	Y	Y	Y	Send full item Change to client
Y	N	N	N	Send read flag only
Y	N	N	Y	Send read flag only
Y	N	Y	N	Send full item Change to client
Y	N	Y	Y	Send full item Change to client
Y	Y	N	N	Send read flag and flag block
Y	Y	N	Y	Send read flag and flag block
Y	Y	Y	N	Send full item Change to client

3.1.5 Message Processing Events and Sequencing Rules

The following sections define how various elements of the E-mail **class** are used in the context of specific commands. For more details about the commands themselves, see [MS-ASCMD].

3.1.5.1 ItemOperations Command

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

The **ItemOperations** command is specified in [MS-ASCMD] section 2.2.1.9.

3.1.5.1.1 *Complex Types*

3.1.5.1.1.1 **Command Request**

Any of the complex types for the E-mail **class** can be included in an **ItemOperations** command request.

E-mail **class** complex types MUST be transmitted as children of the **Schema** type ([MS-ASCMD] section 2.2.1.9.2.12).

3.1.5.1.1.2 **Command Response**

Any of the complex types for the E-mail **class** can be included in an **ItemOperations** command response. If a **Schema** element was included in the command request, then the complex types returned MUST be restricted to the complex types included in the command request's **Schema** element.

E-mail **class** complex types MUST be returned as children of the **Properties** type ([MS-ASCMD] section 2.2.1.9.3.8).

3.1.5.1.2 *Elements*

3.1.5.1.2.1 **Command Request**

Any of the E-mail **class** elements can be included in an **ItemOperations** command request.

E-mail **class** elements MUST be transmitted as children of the **Schema** type ([MS-ASCMD] section 2.2.1.9.2.12)

3.1.5.1.2.2 **Command Response**

Any of the elements for the E-mail **class** can be included in an **ItemOperations** command response. If a **Schema** element was included in the command request, then the elements returned MUST be restricted to the elements included in the command request's **Schema** element.

E-mail **class** elements MUST be returned as children of the **Schema** type ([MS-ASCMD] section 2.2.1.9.2.12).

The **MIMEDData** element MUST be returned when the client has specified in the **ItemOperations** command request that MIME support is enabled, as specified in [MS-ASCMD] section 2.2.1.9.2.8.

3.1.5.2 **Search Command**

A client uses the **Search** command to retrieve E-mail **class** items that match the criteria specified in the client.

The **Search** command is specified in [MS-ASCMD] section 2.2.1.16.

3.1.5.2.1 Complex Types

3.1.5.2.1.1 Command Request

The complex types for the E-mail class **MUST NOT** be included in a **Search** command request.

3.1.5.2.1.2 Command Response

Any of the E-mail **class** types can be included in a **Search** command response.

3.1.5.2.2 Elements

3.1.5.2.2.1 Command Request

The E-mail **class** types **MUST NOT** be included in an **Search** command request.

3.1.5.2.2.2 Command Response

Any of the E-mail **class** elements can be included in a **Search** command response.

3.1.5.3 Sync Command

A client uses the **Sync** command to synchronize its E-mail **class** items for a specific user with the E-mail items currently stored by the server.

The **Sync** command is specified in [MS-ASCMD] section 2.2.1.21.

3.1.5.3.1 Complex Types

3.1.5.3.1.1 Command Request

Any of the E-mail **class** types can be included in **Sync** command request.

E-mail **class** complex types **MUST** be transmitted as children of the **ApplicationData** type, as specified in [MS-ASCMD] section 2.2.1.21.1.6.

3.1.5.3.1.2 Command Response

Any of the E-mail **class** types can be included in a **Sync** command response. If a **Supported** element was included in the command request, then the complex types returned **MUST** be restricted to the complex types included in the command request's **Supported** element.

E-mail **class** complex types **MUST** be returned as children of the **ApplicationData** type, as specified in [MS-ASCMD] section 2.2.1.21.1.6.

3.1.5.3.2 Elements

3.1.5.3.2.1 Command Request

Any of the E-mail **class** elements can be included in a **Sync** command request.

E-mail class elements MUST be transmitted as children of the **Supported** type, as specified in [MS-ASCMD] section 2.2.1.21.1.13.

3.1.5.3.2.2 Command Response

Any of the elements for the E-mail **class** can be included in a **Sync** command response. If a **Properties** element was included in the command request, then the elements returned MUST be restricted to the elements included in the command request's **Properties** element.

E-mail **class** elements MUST be returned as children of the **ApplicationData** type, as specified in [MS-ASCMD] section 2.2.1.21.1.6.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

4.1 Synchronizing HTML E-Mail

4.1.1 Sample Sync Request for Inbox with HTML Mail Support

The following example **Sync** command request includes the **BodyPreference** option, which specifies that the client wants HTML mail (Type 2) with the bodies truncated to 5,120 bytes (5 KB). Request messages can include multiple **BodyPreference** elements to specify different **TruncationSize** and **AllOrNone** values for each **Type** value. For more information about the **BodyPreference**, **TruncationSize**, **AllOrNone**, or **Type** elements, see [MS-ASAIRS] section 2.2.

```
POST /Microsoft-Server-ActiveSync?Cmd=Sync&User=deviceuser&DeviceId=device1&DeviceType=PocketPC HTTP/1.1
Content-Type: application/vnd.ms-sync.wbxml
MS-ASProtocolVersion: 12.1
User-Agent: Microsoft-SmartPhone/2.5
Host:somehost
Content-Length: 106
```

```
<?xml version="1.0" encoding="utf-8"?>
```



```

<Sync xmlns:airsyncbase="AirSyncBase:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <Class>Email</Class>
      <SyncKey>1</SyncKey>
      <CollectionId>7</CollectionId>
      <DeletesAsMoves />
      <GetChanges />
      <Options>
        <airsyncbase:BodyPreference>
          <airsyncbase:Type>2</airsyncbase:Type>
          <airsyncbase:TruncationSize>5120</airsyncbase:TruncationSize>
          <airsyncbase:AllOrNone>0</airsyncbase:AllOrNone>
        </airsyncbase:BodyPreference>
      </Options>
    </Collection>
  </Collections>
</Sync>

```

4.1.2 Sample Sync Response for E-Mail with One HTML Message

The following example response shows the server returning one e-mail item with an HTML body. The body, as well as metadata about its type and estimated size, is included within the **Body** node. In this case, the body has not been truncated. If it had been truncated, then the **Body** node would also include a flag to indicate that the message has been truncated.

Note that the response includes the **NativeBodyType** element (as specified in [MS-ASAIRS] section 2.2.4.11), which indicates that the message is stored as HTML on the server. Also note that, in the example code, HTML strings are escaped by using **<** and **>**. However, as these values are passed over the wire, they are passed in their original HTML format, as **<** and **>**.

```

HTTP/1.1 200 OK
Cache-Control: private
Content-Length: 347
Content-Type: application/vnd.ms-sync.wbxml
Server: Microsoft-IIS/6.0
MS-Server-ActiveSync: 8.1
Date: Tue, 08 May 2007 17:57:32 GMT

```

```

<?xml version="1.0" encoding="utf-8"?><Sync xmlns:email="POOMMAIL:"
xmlns:airsyncbase="AirSyncBase:" xmlns="AirSync:">
  <Collections>

```

```

<Collection>
  <Class>Email</Class>
  <SyncKey>2</SyncKey>
  <CollectionId>7</CollectionId>
  <Status>1</Status>
  <Commands>
    <Add>
      <ServerId>7:1</ServerId>
      <ApplicationData>
        <email:To>"deviceuser" &lt;someone@example.com&gt;
        </email:To>
        <email:From>"deviceuser2" &lt;someone2@example.com&gt;
        </email:From>
        <email:Subject>HTML EMAIL</email:Subject>
        <email:DateReceived>2007-05-08T17:57:22.890Z
        </email:DateReceived>
        <email:DisplayTo>deviceuser</email:DisplayTo>
        <email:ThreadTopic>HTML EMAIL</email:ThreadTopic>
        <email:Importance>1</email:Importance>
        <email:Read>0</email:Read>
        <airsynbase:Body>
          <airsynbase:Type>2</airsynbase:Type>
          <airsynbase:EstimatedDataSize>58
          </airsynbase:EstimatedDataSize>
          <airsynbase:Truncated>1</airsynbase:Truncated>
          <airsynbase:Data>&lt;html&gt;&lt;hea
        </airsynbase:Data>
        </airsynbase:Body>
        <email:MessageClass>IPM.Note</email:MessageClass>
        <email:InternetCPID>28591</email:InternetCPID>
        <email:Flag />
        <email:ContentClass>urn:content-classes:message
        </email:ContentClass>
        <airsynbase:NativeBodyType>1</airsynbase:NativeBodyType>
      </ApplicationData>
    </Add>
  </Commands>
</Collection>
</Collections>
</Sync>

```

4.2 *Setting Flags on the Client and Server*

This section provides an example request and response message that are related to setting flags on the client and server.

Note the following:

- Implicit deletes: This term means that if a tag is not found in the **Flag** container, then the property is deleted.
- Although there are tokens from the **Tasks** namespace, all elements are saved on the e-mail item only. No task items are created.

4.2.1 **Setting a Flag on the Server**

The following is an example response message showing a flag being sent from the server to the client.

```
<?xml version="1.0" encoding="utf-8"?>;
<Sync xmlns:email="POOMMAIL:" xmlns:tasks="POOMTASKS:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <Class>Email</Class>
      <SyncKey>1</SyncKey>
      <CollectionId>7</CollectionId>
      <Status>1</Status>
      <Commands>
        <Change>
          <ServerId>7:2</ServerId>
          <ApplicationData>
            <email:Flag>
              <email:Status>2</email:Status>
              <email:FlagType>Test Follow up</email:FlagType>
              <tasks:StartDate>2005-11-02T00:00:00.000Z
              </tasks:StartDate>
              <tasks:UtcStartDate>2005-11-02T08:00:00.000Z
              </tasks:UtcStartDate>
              <tasks:DueDate>2005-11-09T00:00:00.000Z</tasks:DueDate>
              <tasks:UtcDueDate>2005-11-09T08:00:00.000Z
              </tasks:UtcDueDate>
              <tasks:ReminderSet>1</tasks:ReminderSet>
              <tasks:ReminderTime>2005-11-10T00:00:00.000Z
              </tasks:ReminderTime>
            </email:Flag>
          </ApplicationData>
        </Change>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

```

        <tasks:Subject>Flag Subject</tasks:Subject>
        <tasks:OrdinalDate>2005-11-02T08:30:00.000Z
        </tasks:OrdinalDate>
        <tasks:SubOrdinalDate>5555555</tasks:SubOrdinalDate>
    </email:Flag>
</ApplicationData>
</Change>
</Commands>
</Collection>
</Collections>
</Sync>;

```

4.2.2 Setting a Flag on the Client

The following is an example of how to set a flag in a request message.

```

POST /Microsoft-ServerActiveSync?Cmd=Sync&User=
deviceuser&DeviceId=device1&DeviceType=PocketPC HTTP/1.1
Content-Type: application/vnd.ms-sync.wbxml
MS-ASProtocolVersion: 12.1
User-Agent: Microsoft-SmartPhone/2.5
Host:somehost

```

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="POOMMAIL:" xmlns:tasks="POOMTASKS:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <Class>Email</Class>
      <SyncKey>2</SyncKey>
      <CollectionId>7</CollectionId>
      <DeletesAsMoves />
      <GetChanges />
      <Commands>
        <Change>
          <ServerId>7:1</ServerId>
          <ApplicationData>
            <email:Read>1</email:Read>
            <email:Flag>
              <email:Status>2</email:Status>
              <email:FlagType>Test Follow up</email:FlagType>
              <tasks:StartDate>2005-11-02T00:00:00.000Z

```

```

        </tasks:StartDate>
        <tasks:UtcStartDate>2005-11-02T08:00:00.000Z
        </tasks:UtcStartDate>
        <tasks:DueDate>2005-11-09T00:00:00.000Z</tasks:DueDate>
        <tasks:UtcDueDate>2005-11-09T08:00:00.000Z
        </tasks:UtcDueDate>
        <tasks:ReminderSet>1</tasks:ReminderSet>
        <tasks:ReminderTime>2005-11-10T00:00:00.000Z
        </tasks:ReminderTime>
        <tasks:Subject>Flag Subject</tasks:Subject>
        <tasks:OrdinalDate>2005-11-02T08:30:00.000Z
        </tasks:OrdinalDate>
        <tasks:SubOrdinalDate>5555555</tasks:SubOrdinalDate>
    </email:Flag>
</ApplicationData>
</Change>
</Commands>
</Collection>
</Collections>
</Sync>

```

4.2.3 Setting the Complete Flag

The following is an example of how to send the request message to the server when the **Completed** flag for a **FlagType** set to `Follow up` has been selected on the client.

Note that the **DateCompleted** element indicates when the user selected the **Completed** flag in Outlook. The **CompleteTime** element indicates the time that the item was marked as finished.

```

POST /Microsoft-Server-
ActiveSync?Cmd=Sync&User=deviceuser&DeviceId=device1&DeviceType=
PocketPC HTTP/1.1
Content-Type: application/vnd.ms-sync.wbxml
MS-ASProtocolVersion: 12.1
User-Agent: Microsoft-SmartPhone/2.5
Host:somehost

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="POOMMAIL:" xmlns:tasks="POOMTASKS" xmlns="AirSync:">
  <Collections>
    <Collection>
      <Class>Email</Class>

```

```

    <SyncKey>3</SyncKey>
    <CollectionId>7</CollectionId>
    <DeletesAsMoves />
    <GetChanges />
    <Commands>
      <Change>
        <ServerId>7:1</ServerId>
        <ApplicationData>
          <email:Flag>
            <email:Status>1</email:Status>
            <tasks:DateCompleted>2007-05-08T10:24:26.765Z
          </tasks:DateCompleted>
            <email:CompleteTime>2007-05-08T10:24:26.765Z
          </email:CompleteTime>
          </email:Flag>
        </ApplicationData>
      </Change>
    </Commands>
  </Collection>
</Collections>
</Sync>

```

4.2.4 Clearing a Flag on the Client

The following example shows what to include in a request message to clear a flag.

```

POST /Microsoft-Server-
ActiveSync?Cmd=Sync&User=deviceuser&DeviceId=device1&DeviceType=
PocketPC HTTP/1.1
Content-Type: application/vnd.ms-sync.wbxml
MS-ASProtocolVersion: 12.1
User-Agent: Microsoft-SmartPhone/2.5
Host:somehost

```

```

<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns:email="POOMMAIL:" xmlns:tasks="POOMTASKS:"
xmlns="AirSync:">
  <Collections>
    <Collection>
      <Class>Email</Class>
      <SyncKey>3</SyncKey>
      <CollectionId>7</CollectionId>

```

```
<DeletesAsMoves />
<GetChanges />
<Commands>
  <Change>
    <ServerId>7:1</ServerId>
    <ApplicationData>
      <email:Flag />
    </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: Office/Exchange Behavior

The information in this specification is applicable to the following versions of Office/Exchange:

- Office 2003 with Service Pack 3 applied
- Exchange 2003 with Service Pack 2 applied
- Office 2007 with Service Pack 1 applied
- Exchange 2007 with Service Pack 1 applied

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Office/Exchange behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies Office/Exchange does not follow the prescription.

<1> Section 2.2.4.13: This element contains the subject that appears in the **To-Do Bar** in Office Outlook 2007. The only time this string differs from the subject of the message is when

the user changes the task that appears in the **To-Do Bar**.

<2> Section 2.2.4.24: The **Flag.OrdinalDate** element is used for sorting items within the **To-Do Bar** in Office Outlook 2007.

<3> Section 2.2.4.25: The **Flag.SubOrdinalDate** element is used for sorting items within the **To-Do Bar** in Office Outlook 2007.

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