[MS-ASAIRS]:
ActiveSync AirSyncBase Namespace Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
12/03/2008	1.0	Major	Initial Release.
03/04/2009	1.0.1	Editorial	Revised and edited technical content.
04/10/2009	2.0	Major	Updated technical content and applicable product releases.
07/15/2009	3.0	Major	Revised and edited for technical content.
11/04/2009	3.1.0	Minor	Updated the technical content.
02/10/2010	3.0.2	Editorial	Updated the technical content.
05/05/2010	4.0.0	Major	Updated and revised the technical content.
08/04/2010	5.0	Major	Significantly changed the technical content.

Contents

1 Introduction

This document specifies the elements in the AirSyncBase namespace, which are used by the AirSync commands specified in [MS-ASCMD] to identify the size, type, and content of the data returned to the client in the response message. The AirSyncBase namespace contains elements used in both request and response command messages.

1.1 Glossary

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

attachment
attachments table
base64 encoding
calendar
class
collection
contact
Embedded Message object
Hypertext Markup Language (HTML)
identifier
message
message body
message part
MIME
plain text
Rich Text Format (RTF)
rules
store
Unicode
Uniform Resource Locator (URL)
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-ASCMD] Microsoft Corporation, "ActiveSync Command Reference Protocol Specification", December 2008.

[MS-ASCNTC] Microsoft Corporation, "ActiveSync Contact Class Protocol Specification", December 2008.

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

[MS-ASEMAIL] Microsoft Corporation, "ActiveSync E-Mail Class Protocol Specification", December 2008.

[MS-ASNOTE] Microsoft Corporation, "ActiveSync Notes Class Protocol Specification", April 2009.

[MS-ASTASK] Microsoft Corporation, "ActiveSync Tasks Class Protocol Specification", December 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

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

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

1.2.2 Informative References

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

1.3 Overview

The elements specified in the AirSyncBase namespace are used by multiple ActiveSync commands to identify the size, type, and content of data returned to the client in the response message. In order to use the elements in the AirSyncBase namespace, the namespace is included in the command response message, and the elements are included in the request and response as specified in this document.

1.4 Relationship to Other Protocols

The **ItemOperations** ([MS-ASCMD] section 2.2.2.8), **Search** ([MS-ASCMD] section 2.2.2.14), and **Sync** ([MS-ASCMD] section 2.2.2.19) commands use the ActiveSync E-mail, **Contact**, Note, and Task **classes** in their request and response syntax. These classes use elements from the AirSyncBase namespace, as specified in [MS-ASEMAIL], [MS-ASCNTC], [MS-ASNOTE], and [MS-ASTASK].

The elements in this specification use data types specified in [MS-ASDTYPE].

1.5 Prerequisites/Preconditions

To use the elements in the AirSyncBase namespace, include the namespace in the command request. The namespace is included by adding the following to the command request:

<CommandName xmlns:airsyncbase="ClassName:">

For a complete example, see [MS-ASCMD] section 4.10.1.1.

1.6 Applicability Statement

This specification applies to the **ItemOperations**, **Search**, and **Sync** commands, as specified in [MS-ASCMD].

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

The <Type> element can be extended to include custom **message** types. For more details, see section 2.2.2.2.1.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The elements specified in the following sections are sent and received by using the **ItemOperations**, **Search**, and **Sync** commands, as specified in [MS-ASCMD], and are used by the E-mail **class**, as specified in [MS-ASEMAIL].

2.2 Message Syntax

The AirSyncBase namespace adheres to the following **XML schema definition (XSD)**, using the mechanisms specified in [XMLNS] and [XMLSCHEMA1]:

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

    <xs:element name="FileReference" type="xs:string" />
    <xs:element name="BodyPreference">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="Type" type="xs:unsignedByte" />
                <xs:element name="TruncationSize" minOccurs="0" type="xs:unsignedInt" />
                <xs:element name="AllOrNone" minOccurs="0" type="xs:boolean"/>
                <xs:element name="Preview" minOccurs="0">
                    <xs:simpleType>
                        <xs:restriction base="xs:unsignedInt">
                            <xs:minInclusive value="0"/>
                            <xs:maxInclusive value="255"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="BodyPartPreference">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="Type">
                  <xs:simpleType>
                    <xs:restriction base="xs:unsignedByte">
                      <xs:minInclusive value="1"/>
                      <xs:maxInclusive value="4"/>
                    </xs:restriction>
                  </xs:simpleType>
                </xs:element>
                <xs:element name="TruncationSize" minOccurs="0" type="xs:unsignedInt" />
                <xs:element name="AllOrNone" minOccurs="0" type="xs:boolean"/>
                <xs:element name="Preview" minOccurs="0">
                    <xs:simpleType>
                        <xs:restriction base="xs:unsignedInt">
                            <xs:minInclusive value="0"/>
```

```
                            <xs:maxInclusive value="255"/>
                        </xs:restriction>
                    </xs:simpleType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="Body">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="Type" type="xs:unsignedByte" />
                <xs:element name="EstimatedDataSize" type="xs:unsignedInt" minOccurs="0"/>
                <xs:element name="Truncated" minOccurs="0" type="xs:boolean"/>
                <xs:element name="Data" minOccurs="0" type="xs:string" />
                <xs:element name="Preview" minOccurs="0" type="xs:string" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="BodyPart">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="Status" type="xs:unsignedByte" />
                <xs:element name="Type" type="xs:unsignedByte" />
                <xs:element name="EstimatedDataSize" type="xs:unsignedInt" />
                <xs:element name="Truncated" minOccurs="0" type="xs:boolean"/>
                <xs:element name="Data" minOccurs="0" type="xs:string" />
                <xs:element name="Preview" minOccurs="0" type="xs:string" />
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="Attachments">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="Attachment">
                    <xs:complexType>
                        <xs:all>
                            <xs:element name="DisplayName" type="xs:string" minOccurs="0"/>
                            <xs:element name="FileReference" type="xs:string" />
                            <xs:element name="Method" type="xs:unsignedByte" />
                            <xs:element name="EstimatedDataSize" type="xs:unsignedInt" />
                            <xs:element name="ContentId" type="xs:string" minOccurs="0" />
                            <xs:element name="ContentLocation" type="xs:string"
minOccurs="0"/>
                            <xs:element name="IsInline" minOccurs="0" type="xs:boolean"/>
                        </xs:all>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:complexType name="EmptyTag"/>
    <xs:element name="NativeBodyType" type="xs:unsignedByte" />
    <xs:group name="TopLevelSchemaProps">
        <xs:sequence>
            <xs:choice maxOccurs="unbounded">
                <xs:element name="Body" type="airsyncbase:EmptyTag"/>
                <xs:element name="BodyPart" type="airsyncbase:EmptyTag"/>
                <xs:element name="Attachments" type="airsyncbase:EmptyTag"/>
            </xs:choice>
```

```
        </xs:sequence>
    </xs:group>
</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	AirSyncBase	
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

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.

Element	Description
FileReference	A unique **identifier** that is assigned by the server to each **attachment** to a message.
BodyPreference	A **collection** of elements that sets the preference information related to the type and size of information that is returned from searching, synchronizing, or fetching.
Type	The preferred format type of the body content of the item.
TruncationSize	Specifies the size, in bytes, of the content that the client wants to search, synchronize, or fetch.
AllOrNone	Specifies whether to search, synchronize, or retrieve all or none of the content based on the <TruncationSize> element.
Preview	The preferred length of the message preview to be returned to the client.
BodyPartPreference	A collection of elements that sets the preference information related to the type and size of information that is returned from searching, synchronizing, or fetching a <BodyPart>.
Type	The preferred format type of the body part content of the item.
TruncationSize	Specifies the size, in bytes, of the content that the client wants to search, synchronize, or fetch.

Element	Description
AllOrNone	Specifies whether to search, synchronize, or retrieve all or none of the content based on the <TruncationSize> element.
Preview	The preferred length of the message preview to be returned to the client.
Body	A collection of elements that specifies a free-form, variable-length data field associated with a stored item on the server.
Type	The format type of the body content of the item.
EstimatedDataSize	An informational estimate of the size of the data associated with the item's <Body> element.
Truncated	Specifies whether the body of the item has been truncated according to the <BodyPreference> element indicated by the client.
Data	The body of the **calendar** item, contact, document, e-mail, or task.
Preview	The length of the message preview to be returned to the client.
BodyPart	A collection of elements that contains the **message part** of the body of an e-mail.
Status	The status of the <Data> element within the **BodyPart** response.
Type	The format type of the body part content of the item.
EstimatedDataSize	An informational estimate of the size of the data associated with the item's <BodyPart> element.
Truncated	Specifies whether the body of the item has been truncated according to the <BodyPartPreference> element indicated by the client.
Data	The body part of the calendar item, contact, document, e-mail, note, or task.
Preview	The length of the message preview to be returned to the client.
Attachments	A collection of elements that contains one or more attachment items.
Attachment	Specifies the attachment information for a single attachment item.
DisplayName	The display name of the attachment.
FileReference	The location of an item on the server to retrieve.
Method	Identifies the method in which the attachment was attached.
EstimatedDataSize	An informational estimate of the size of the data associated with the attachment.
ContentId	Contains the unique object ID for an attachment.
ContentLocation	Contains the relative **URL** for an attachment, which is used to match a reference to an inline attachment in an **HTML** message to the attachment in the **attachments table**.
IsInline	Specifies whether the attachment is embedded in the message.
NativeBodyType	The original format type of the item.

2.2.2.1 FileReference

The <FileReference> element specifies a unique identifier that is assigned by the server to each attachment to a message. In an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8), the <FileReference> element is an optional child element of the <itemoperations:Fetch> element ([MS-ASCMD] section 2.2.2.8.2.1.2).

The value of this element is a **string** value ([MS-ASDTYPE] section 2.6). If the client includes a zero-length string for the value of this element in an **ItemOperations** command request, the server responds with a protocol status error of 15.

The <FileReference> element MUST have no child elements.

2.2.2.2 BodyPreference

The <BodyPreference> element is an optional container ([MS-ASDTYPE] section 2.2) element that sets preference information related to the type and size of information that is returned from searching, synchronizing, or fetching.

A command response MUST NOT include the <BodyPreference> element. Command requests can include the <BodyPreference> element.

In a request, the <Options> element MUST be the parent element of the <BodyPreference> element. If it is not, then the server returns either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request. The <BodyPreference> element, if present, can have the following child elements in this order:

- <Type> (section 2.2.2.2.1). This element is required.
- <TruncationSize> (section 2.2.2.2.2). This element is optional.
- <AllOrNone> (section 2.2.2.2.3). This element is optional.
- <Preview> (section 2.2.2.2.4). This element is optional.

If the client issues a **Sync** command request with these elements in a different order, then the server responds with a protocol status error of 4. If the client issues an **ItemOperations** command request with these elements in a different order, then the server responds with a protocol status error of 2.

The contents of the <airsync:Options>, <itemoperations:Options>, or <search:Options> element specify preferences for all of the content that the user is interested in searching, synchronizing, or retrieving. These preferences are persisted by the server from request to request for the specified client, and can be changed by the inclusion of an <airsync:Options> element in any subsequent request.

The client specifies the sets of preferences for different types of content by using a separate <BodyPreference> element for each <Type>. If multiple content types have the same preferences, then the client sends a different <BodyPreference> element for each <Type> to prevent ambiguity in specifying the preferences.

The client MUST NOT provide more than one <BodyPreference> element for each allowable value of the <Type> element. If the client includes two or more <BodyPreference> elements with the same value of the <Type> element in a **Sync** command request, then the server responds with a protocol status error of 4; if the client includes such values in an **ItemOperations** command request, then the server responds with a protocol status error of 2.

2.2.2.2.1 Type

The <Type> element is a required child element of the <BodyPreference> element (section 2.2.2.2) that indicates the format type of the body content of the item. If the <Type> element is not included in a command request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

The value of this element is an **enumeration** value ([MS-ASDTYPE] section 2.4). If the client submits a value other than an **enumeration** value for this element in a command request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

A command request or response MUST have a maximum of one <Type> element per <BodyPreference> element. If a client request includes more than one <Type> element per <BodyPreference> element, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

The <Type> element MUST have no child elements. If the client issues a request with child elements, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

The following table defines the valid values of the <Type> element. If the client includes a non-enumerated value for this element in a command request, the server responds with a protocol status error of 6 in a **Sync** command request, and a protocol status error of 2 in an **ItemOperations** command request.

Enumeration Value	Description
1	**Plain text**
2	HTML
3	**RTF**
4	**MIME**

2.2.2.2.2 TruncationSize

The <TruncationSize> element is an optional child element of the <BodyPreference> type (section 2.2.2.2) that specifies the size, in bytes, of the content that the user wants to **Search**, **Synchronize**, or **ItemOperations**.

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5). If a client request submits a noninteger value for this element, the server responds with either a protocol status error of 6 in a **Sync** command request, or a protocol status error of 2 in an **ItemOperations** command request.

A command request MUST have a maximum of one <TruncationSize> element per <BodyPreference> element. If the client includes more than one <TruncationSize> element per <BodyPreference> element, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

Command responses MUST NOT include the <TruncationSize> element.

The <TruncationSize> element MUST have no child elements. If the client includes child elements for the <TruncationSize> element in a command request, the server responds with either a protocol

status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

If the <TruncationSize> element is absent, the server assumes that the user will search the entire content. If the server sends the response in the corresponding content type and if the size of the entire content is greater than the value that is specified by <TruncationSize>, then the server truncates the message to the size that is specified by <TruncationSize> and sends it in the specified encoding. The maximum value for <TruncationSize> is 4,294,967,295. If a client request includes a larger value for this element in a command request, the server responds with a protocol status error of 6.

2.2.2.2.3 AllOrNone

The <AllOrNone> element is an optional child element of the <BodyPreference> element (section 2.2.2.2) that specifies whether to search, synchronize, or retrieve all or none of the content based on the <TruncationSize> (section 2.2.2.2.2) element.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). If a non-boolean value is included in a client request, the server responds with either a protocol status error of 4 in a Sync command request or a protocol status error of 2 in an ItemOperations command request. When the value is set to 1 (TRUE) and the content has not been truncated, all of the content is searched, synchronized, or retrieved. When the value is set to 1 (TRUE) and the content has been truncated, the content is not searched, synchronized, or retrieved. When the value is set to 0 (FALSE), the truncated or non-truncated content is searched, synchronized, or retrieved.

A command request MUST have a maximum of 1 <AllOrNone> element per <BodyPreference> element. If a command request includes more than one <AllOrNone> element per <BodyPreference> element, the server returns either a protocol status error of 4 in a Sync command request or a protocol status error of 2 in an ItemOperations command request. If the <AllOrNone> element is not included in the request, then the truncated or non-truncated content is searched, synchronized, or retrieved as if the value was set to 0 (FALSE). The <AllOrNone> element MUST NOT be used in command responses.

This element MUST be ignored if the <TruncationSize> element is not included.

A client can include multiple <BodyPreference> elements in a command request with different values for the <Type> element (section 2.2.2.2.1). By default, the server returns the data truncated to the size requested by <TruncationSize> for the <Type> element that matches the native storage format of the item's <Body> element (section 2.2.2.4). But, if the client also includes the <AllOrNone> element along with the <TruncationSize> element, it is instructing the server not to return a truncated response for that type when the size (in bytes) of the available data exceeds the value of the <TruncationSize> element. For example, a client can use these two elements to signify that it cannot process partial Rich Text Format (RTF) data (a <Type> element value of 3). In this case, if the client has specified multiple <BodyPreference> elements, the server selects the next <BodyPreference> element that will return the maximum amount of body text to the client. Assume that the client specifies two <BodyPreference> elements.

```
<airsyncbase:BodyPreference>
     <airsyncbase:Type>2</airsyncbase:Type>
     <airsyncbase:AllOrNone>1</airsyncbase:AllOrNone>
     <airsyncbase:TruncationSize>50</airsyncbase:TruncationSize>
</airsyncbase:BodyPreference>

<airsyncbase:BodyPreference>
     <airsyncbase:Type>1</airsyncbase:Type>
     <airsyncbase:TruncationSize>50</airsyncbase:TruncationSize>
```

```
</airsyncbase:BodyPreference>
```

The first <BodyPreference> element requests an **HTML** body, but only if the body size is less than 50 bytes. The second requests an element in **plain text** format. If the client requests a text body whose native format is **HTML**, and the size of the data exceeds 50 bytes, the server converts the body to **plain text** and returns the first 50 bytes of **plain text** data.

2.2.2.2.4 Preview

The <Preview> element<1> is an optional child element of the <BodyPreference> element (section 2.2.2.2) that specifies the maximum length of the **Unicode** plain text message or message part preview to be returned to the client.

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5). This element MUST have a value set from 0 to 255, inclusive. If the client includes a non-**integer** value for this element or the value of this element exceeds 255, then the server responds with either a protocol status error of 6 for a **Sync** command request or a protocol status error of 2 for an **ItemOperations** command request.

A command request MUST have a maximum of one <Preview> element per <BodyPreference> element. If a command request contains more than one <Preview> element per <BodyPreference> element, then the server returns either a protocol status error of 6 for a **Sync** command request or a protocol status error of 2 for an **ItemOperations** command request.

The <Preview> element MUST have no child elements. If a client request includes child elements in the <Preview> element, the server responds with a protocol status error of 6 for a **Sync** command request, and a protocol status error of 2 for an **ItemOperations** command request.

2.2.2.3 BodyPartPreference

The <BodyPartPreference> element<2> is an optional container ([MS-ASDTYPE] section 2.2) element that sets preference information related to the type and size of information that is returned from searching, synchronizing, or fetching a message part.

A command response MUST NOT include a <BodyPartPreference> element. Command requests can include the <BodyPartPreference> element.

In a request, the <Options> element MUST be the parent element of the <BodyPartPreference> element. The <BodyPartPreference> element, if present, MUST have the following required and optional child elements in the following order:

- <Type> (section 2.2.2.3.1). This element is required.
- <TruncationSize> (section 2.2.2.3.2). This element is optional.
- <AllOrNone> (section 2.2.2.3.3). This element is optional.
- <Preview> (section 2.2.2.3.4). This element is optional.

The contents of the <Options> element specify preferences for all of the content that the user is interested in searching, synchronizing, or retrieving. These preferences are set on a per-request basis and override any stored information. Because this information is required to process every request, the information can be persisted on the server if network load is a concern.

There MUST be one explicit <BodyPartPreference> element for each <Type> value specified in the set of preferences in order to request a <BodyPart> element (section 2.2.2.5) of that <Type> in the response. The server SHOULD<3> support a <Type> value of 2 (HTML) in the response and MAY support other values. The client MUST specify the <BodyPartPreference> element when a <BodyPart> element is requested as part of the server response. The server only returns a <BodyPart> element in the response if a <BodyPartPreference> element has been received in a client request.

2.2.2.3.1 Type

The <Type> element is a required child element of the <BodyPartPreference> element (section 2.2.2.3) that indicates the format type of the body content of the item.<4> If the <Type> element is not included in a command request, the server responds with either a protocol status error 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

The value of this element is an **enumeration** value ([MS-ASDTYPE] section 2.4). If the client submits a value other than an **enumeration** value for this element in a command request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

A command request or response MUST have a maximum of one <Type> element per <BodyPartPreference> element. If a client request includes more than one <Type> element per <BodyPartPreference> element, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

The <Type> element MUST have no child elements. If the client issues a request with child elements, the server responds with a protocol status error.

The following table defines the valid values of the <Type> enumeration. Only a value of 2 (HTML) SHOULD<5> be used in the <Type> element of a <BodyPartPreference> element. If the client includes a non-enumerated value for this element in a command request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

Enumeration value	Description
1	Plain text
2	HTML
3	RTF
4	MIME

2.2.2.3.2 TruncationSize

The <TruncationSize> element is an optional child element of the <BodyPartPreference> element (section 2.2.2.3) that specifies the size, in bytes, of the content that the user wants to **Search**, **Synchronize**, or **Fetch**.

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5). If a client request submits a noninteger value for this element, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

A command request MUST have a maximum of one <TruncationSize> element per <BodyPartPreference> element. If the client includes more than one <TruncationSize> element per <BodyPartPreference> element, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

Command responses MUST NOT include the <TruncationSize> element.

The <TruncationSize> element MUST have no child elements. If the client includes child elements for the <TruncationSize> element in a command request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

If the <TruncationSize> element is absent, the server assumes that the user will search the entire content. If the server sends the response in the corresponding content type and if the size of the entire content is greater than the value that is specified by <TruncationSize>, then the server truncates the message to the size that is specified by <TruncationSize> and sends it in the specified encoding. The maximum value for <TruncationSize> is 4,294,967,295. If a client request includes a larger value for this element in a command request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

2.2.2.3.3 AllOrNone

The <AllOrNone> element is an optional child element of the <BodyPartPreference> element (section 2.2.2.3) that specifies whether to search, synchronize, or retrieve all or none of the content based on the <TruncationSize> element (section 2.2.2.3.2).

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1). If a nonboolean value is included in a client request, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request. When the value is set to 1 (TRUE) and the content has not been truncated, all of the content is searched, synchronized, or retrieved. When the value is set to 1 (TRUE) and the content has been truncated, the content is not searched, synchronized, or retrieved. When the value is set to 0 (FALSE), the truncated or nontruncated content is searched, synchronized, or retrieved.

A command request MUST have a maximum of 1 <AllOrNone> element per <BodyPartPreference> element. If a command request includes more than one <AllOrNone> element per <BodyPartPreference> element, then the server returns either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request. If the <AllOrNone> element is not included in the request, the truncated or nontruncated content is searched, synchronized, or retrieved as if the value was set to 0 (FALSE). The <AllOrNone> element MUST NOT be used in command responses.

This element MUST be ignored if the <TruncationSize> element is not included.

A client can include multiple <BodyPartPreference> elements in a command request with different values for the <Type> element (section 2.2.2.3.1). By default, the server returns the data truncated to the size requested by <TruncationSize> for the <Type> element that matches the native storage format of the item's <Body> element (section 2.2.2.4). But, if the client also includes the <AllOrNone> element along with the <TruncationSize> element, it is instructing the server not to return a truncated response for that type when the size (in bytes) of the available data exceeds the value of the <TruncationSize> element. For example, a client can use these two elements to signify that it cannot process partial Rich Text Format (RTF) data (a <Type> element value of 3). In this case, if the client has specified multiple <BodyPartPreference> elements, the server selects the next <BodyPartPreference> element that will return the maximum amount of body text to the client. Assume that the client specifies two <BodyPartPreference> elements:

```
<airsyncbase:BodyPartPreference>
     <airsyncbase:Type>2</airsyncbase:Type>
     <airsyncbase:AllOrNone>1</airsyncbase:AllOrNone>
     <airsyncbase:TruncationSize>50</airsyncbase:TruncationSize>
</airsyncbase:BodyPartPreference>

<airsyncbase:BodyPartPreference>
     <airsyncbase:Type>1</airsyncbase:Type>
     <airsyncbase:TruncationSize>50</airsyncbase:TruncationSize>
</airsyncbase:BodyPartPreference>
```

The first <BodyPartPreference> element requests an **HTML** body, but only if the body size is less than 50 bytes. The second requests an element in **plain text** format. If the client requests a text body whose native format is **HTML**, and the size of the data exceeds 50 bytes, the server converts the body to **plain text** and returns the first 50 bytes of **plain text** data.

2.2.2.3.4 Preview

The <Preview> element<6> is an optional child element of the <BodyPartPreference> element (section 2.2.2.3) that specifies the maximum length of the Unicode plain text message or message part preview to be returned to the client.

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5).This element MUST have a value set from 0 to 255, inclusive. If the client includes a value for this element that is not an **integer** or the value of this element exceeds 255, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

A command request MUST have a maximum of one <Preview> element per <BodyPartPreference> element. If a command request contains more than one <Preview> element per <BodyPartPreference> element, then the server returns either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

The <Preview> element MUST have no child elements. If a client request includes child elements in the <Preview> element, the server responds with either a protocol status error of 6 in a **Sync** command request or a protocol status error of 2 in an **ItemOperations** command request.

2.2.2.4 Body

The <Body> element is an optional child type of the <ApplicationData> element that specifies a free-form, variable length data field associated with a stored item on the server. Examples include, but are not limited to, the body of an e-mail message and the Notes field in a contact. The <Body> element MUST be included in a response message whenever a content class has changes or new items.

The <Body> element is a container ([MS-ASDTYPE] section 2.2).

There is no limit on the number of <Body> elements in a command response. When included in a command response, the <Body> element indicates the existence of one or more variable-length fields of data associated with the item. Command requests can include the <Body> element.

In a response, the <airsync:ApplicationData> element MUST be the parent element of the <Body> element. For more details about the <airsync:ApplicationData> element, see [MS-ASCMD] section 2.2.2.19.2.1.3.1.4.3.3.

The <Body> element, if present, has the following required and optional child elements in this order:

- <Type> (section 2.2.2.4.1): This element is required.
- <EstimatedDataSize> (section 2.2.2.4.2): This element is optional.
- <Truncated> (section 2.2.2.4.3). This element has no effect in a command request and is optional in the response.
- <Data> (section 2.2.2.4.4): This element is optional.
- <Preview> (section 2.2.2.4.5): This element is optional.

2.2.2.4.1 Type

The <Type> element is a required element of the <Body> element (section 2.2.2.4) that indicates the format type of the body content of the item.

The value of this element is an **enumeration** value ([MS-ASDTYPE] section 2.4). If the client submits a value other than an **enumeration** value for this element in a command request, the server responds with a protocol status error of 6 in a **Sync** command request.

A command request or response MUST have a maximum of one <Type> element per <Body> element. If a client request includes more than one <Type> element per <Body> element, the server responds with a protocol status error of 6 in a **Sync** command request.

The <Type> element MUST have no child elements. If the client issues a request with child elements, the server responds with a protocol status error of 6 in a **Sync** command request.

The following table defines the valid values of the <Type> enumeration. If the client includes a non-enumerated value for this element in a command request, the server responds with a protocol status error of 6 in a **Sync** command request.

Enumeration value	Description
1	Plain text
2	HTML
3	RTF
4	MIME

2.2.2.4.2 EstimatedDataSize

The <EstimatedDataSize> element is an optional child element of the <Body> element (section 2.2.2.4) that provides an informational estimate of the size of the data associated with the <Body> element. The <EstimatedDataSize> element SHOULD be included in a response message whenever the <Truncated> element is set to TRUE.

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5). If the client includes a noninteger value for this element in a command request, the server responds with a status error of 6 in a **Sync** command request.

A command response MUST have a maximum of one <EstimatedDataSize> element per <Body> element. If an <EstimatedDataSize> element is included in a request, then the element is ignored and no error is thrown.

The <EstimatedDataSize> element MUST have no child elements. If this element has child elements, the server responds with a protocol status error of 6 in a **Sync** command request.

The <EstimatedDataSize> value represents the original size of the content in the **store** for the <Body> element and is specified in bytes. The client uses this number only for an informational display to the user. This number is only an estimate, and the actual size of the body when fetched can differ based on the content filtering rules applied. The client does not make any memory allocations based on this number for future requests.

2.2.2.4.3 Truncated

The <Truncated> element is an optional child element of the <Body> element (section 2.2.2.4) that specifies whether the body of the item has been truncated according to the <BodyPreference> element (section 2.2.2.2) indicated by the client.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1).

If a <Truncated> element is included in a command request, then it is ignored by the server.

A command response MUST have a maximum of one <Truncated> element per <Body> element. If the command response does not contain a <Truncated> element, the client MUST process the message as if the whole body is contained in the message response (as if the <Truncated> element is set to FALSE).

2.2.2.4.4 Data

The <Data> element is an optional child element of the <Body> element (section 2.2.2.4) that contains the data of the **message body** or the message part of the calendar item, contact, document, e-mail, or task.

The value of this element is a **string** ([MS-ASDTYPE] section 2.6)

A command response MUST have a maximum of one <Data> element within each returned <Body> element. Command requests MAY include the <Data> element.

In a response, the <Data> element MUST have no child elements.

The content of the <Data> element is returned as a **string** in the format that is specified by the <Type> element (section 2.2.2.4.1).If the value of the <Type> element is 3 (RTF), the server applies **base64 encoding** to the value of the <Data> element.

If the <Truncated> element (section 2.2.2.4.3) is included in the response, the data in the <Data> element is truncated. The <EstimatedDataSize> element (section 2.2.2.4.2) provides a rough estimation of the actual size of the complete content of the <Data> **string**. The client makes appropriate buffer provisions to handle the incoming data.

If the <AllOrNone> element (section 2.2.2.2.3) of the **Search** command is included, and there is no <Body> element (also set by the **Search** command) that the server can fall back to, then the server responds with a protocol status error of 6.

2.2.2.4.5 Preview

The <Preview> element<7> is an optional child element of the <Body> element (section 2.2.2.4) that contains the Unicode plain text message or message part preview returned to the client.

The value of this element is a **string** ([MS-ASDTYPE] section 2.6). The <Preview> element in a response MUST contain no more than the number of characters specified in the request. The <Preview> element MUST be returned in a command response if a <BodyPreference> element (section 2.2.2.2) in the request included a <Preview> element and the server can honor the request.

Command responses MUST have a maximum of one <Preview> element per <Body> element.

The <Preview> element MUST have no child elements. If a client request includes child elements in the <Preview> element, the server responds with a protocol status error of 6 in a **Sync** command request.

2.2.2.5 BodyPart

The <BodyPart> element is an optional child type of the <airsync:ApplicationData> element that specifies details about the message part of an e-mail in a response. The <BodyPart> element MUST be included in a command response when the <BodyPartPreference> element (section 2.2.2.3) is specified in a request.

The <BodyPart> element is a container ([MS-ASDTYPE] section 2.2).

There is no limit on the number of <BodyPart> elements in a command response. Command requests MUST NOT include the <BodyPart> element.

In a response, the <airsync:ApplicationData> element MUST be the parent element of the <BodyPart> element. For more information details about the <airsync:ApplicationData> element, see [MS-ASCMD] section 2.2.2.19.1.2.1.1.9.1.2.

The <BodyPart> element, if present, MUST have its required and optional child elements in the following order:

- <Status> (section 2.2.2.5.1). This element is required.
- <Type> (section 2.2.2.5.2). This element is required.
- <EstimatedDataSize> (section 2.2.2.5.3). This element is required.
- <Truncated> (section 2.2.2.5.4). This element is optional.
- <Data> (section 2.2.2.5.5). This element is optional.
- <Preview> (section 2.2.2.5.6). This element is optional.

2.2.2.5.1 Status

The <Status> element is a child of the <BodyPart> element (section 2.2.2.5) that indicates the success or failure of the response in returning <Data> element content (section 2.2.2.5.5) given the <BodyPartPreference> element settings (section 2.2.2.3) in the request.

The following table lists valid values for the <Status> element.

Value	Meaning
1	Success.
176	The message part is too large.

2.2.2.5.2 Type

The <Type> element is a required child element of the <BodyPart> element (section 2.2.2.5) that indicates the format type of the body content of the item.

The value of this element is an **enumeration** value ([MS-ASDTYPE] section 2.4). If the client submits a value other than an **enumeration** value for this element in a command request, the server responds with a protocol status error of 6 in a **Sync** command request.

A command request or response MUST have a maximum of one <Type> element per <BodyPart> element. If a client request includes more than one <Type> element per <BodyPart> element, the server responds with a protocol status error of 6 in a **Sync** command request.

The <Type> element MUST have no child elements. If the client issues a request with child elements, the server responds with a protocol status error of 6 in a **Sync** command request.

The following table defines the valid values of the <Type> enumeration. If the client includes a non-enumerated value for this element in a command request, the server responds with a protocol status error of 6 in a **Sync** command request.

Enumeration value	Description
1	Plain text
2	HTML
3	RTF
4	MIME

2.2.2.5.3 EstimatedDataSize

The <EstimatedDataSize> element is a required child element of the <BodyPart> element (section 2.2.2.5) that provides an informational estimate of the complete size of the unique message part of the e-mail. The <EstimatedDataSize> element SHOULD be included in a response message whenever the <Truncated> element is set to TRUE.

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5). If the client includes a noninteger value for this element in a command request, the server responds with a status error of 6.

A command response MUST have a maximum of one <EstimatedDataSize> element per <BodyPart> element. If an <EstimatedDataSize> element is included in a request, the element is ignored and no error is thrown.

The <EstimatedDataSize> element MUST have no child elements.

The <EstimatedDataSize> value represents the complete size of the unique message part content for the <BodyPart> element and is specified in bytes. The client uses this number only for an informational display to the user. This number is only an estimate, and the actual size of the body

when fetched can differ based on the content filtering **rules** applied. The client does not make any memory allocations based on this number for future requests.

2.2.2.5.4 Truncated

The <Truncated> element is an optional child element of the <BodyPart> element (section 2.2.2.5) that specifies whether the body of the item has been truncated according to the <BodyPartPreference> element (section 2.2.2.3) indicated by the client.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1).

If a <Truncated> element is included in a command request, it is ignored by the server.

A command response MUST have a maximum of one <Truncated> element per <BodyPart> element. If the command response does not contain a <Truncated> element, the client MUST process the message as if the whole body is contained in the message response (as if the <Truncated> element is set to FALSE).

2.2.2.5.5 Data

The <Data> element is an optional child element of the <BodyPart> element (section 2.2.2.5) that contains the data of the message body or the message part of the calendar item, contact, document, e-mail, or task.

The value of this element is a **string** ([MS-ASDTYPE] section 2.6).

A command response MUST have a maximum of one <Data> element within each returned <BodyPart> element. Command requests MAY include the <Data> element.

In a response, the <Data> element MUST have no child elements.

The content of the <Data> element is returned as a **string** in the format that is specified by the <Type> element (section 2.2.2.5.2). If the value of the <Type> element is 3 (RTF), the server applies **base64 encoding** to the value of the <Data> element.

If the <Truncated> element (section 2.2.2.5.4) is included in the response, then the data in the <Data> element is truncated. The <EstimatedDataSize> element (section 2.2.2.5.3) provides a rough estimation of the actual size of the complete content of the <Data> **string**. The client makes appropriate buffer provisions to handle the incoming data.

If the <AllOrNone> element (section 2.2.2.3.3) of the **Search** command is included and there is no <BodyPart> element (also set by the **Search** command) that the server can fall back to, then the server responds with a protocol status error of 6 in a **Sync** command request.

2.2.2.5.6 Preview

The <Preview> element<8> is an optional child element of the <BodyPart> element (section 2.2.2.5) that contains the Unicode plain text message or message part preview returned to the client.

The value of this element is a **string** ([MS-ASDTYPE] section 2.6). The <Preview> element in a response MUST contain no more than the number of characters specified in the request. The <Preview> element MUST be returned in a command response if a <BodyPartPreference> element (section 2.2.2.3) in the request included a <Preview> element and the server can honor the request.

Command responses MUST have a maximum of one <Preview> element per <BodyPart> element.

The <Preview> element MUST have no child elements. If a client request includes child elements in the <Preview> element, the server responds with a protocol status error of 6 in a **Sync** command request.

2.2.2.6 Attachments

The <Attachments> element is an optional child element of the <Properties> element ([MS-ASCMD] section 2.2.2.8.3.1.2.3.6) in the **Fetch** command request that contains one or more attachment items.

There is no limit on the number of <Attachments> elements in a command response. Command requests MUST NOT include the <Attachments> element. If a command request includes the <Attachments> element, the server responds with a protocol status error of 6.

The <Attachments> element can have the following child elements:

- <Attachment> (section 2.2.2.6.1): At least one instance of this element is required.

2.2.2.6.1 Attachment

The <Attachment> element is a required child element of the <Attachments> element (section 2.2.2.6) and specifies the attachment information for a single attachment item.

Command requests MUST NOT include the <Attachment> element. If a command request includes the <Attachment> element, the server responds with a protocol status error of 6.

The <Attachment> element can have one or more of the following child elements in any order (elements noted as optional can be in the response):

- <DisplayName> (section 2.2.2.6.1.1). This element is optional.
- <FileReference> (section 2.2.2.6.1.2). This element is required.
- <Method> (section 2.2.2.6.1.3). This element is required.
- <EstimatedDataSize> (section 2.2.2.6.1.4). This element is required.
- <ContentId> (section 2.2.2.6.1.5). This element is optional.
- <ContentLocation> (section 2.2.2.6.1.6). This element is optional.
- <IsInline> (section 2.2.2.6.1.7). This element is optional.

2.2.2.6.1.1 DisplayName

The <DisplayName> element is an optional child element of the <Attachment> element (section 2.2.2.6.1) that specifies the display name of the attachment.

The value of this element is a **string** value ([MS-ASDTYPE] section 2.6).

A command response MUST have a maximum of one <DisplayName> element per <Attachment> element.

The <DisplayName> element MUST have no child elements.

2.2.2.6.1.2 FileReference

The <FileReference> element is a required child element of the <Attachment> element (section 2.2.2.6.1) that specifies the location of an item on the server to retrieve.

The value of this element is a **string** value ([MS-ASDTYPE] section 2.6).

2.2.2.6.1.3 Method

The <Method> element is a required child element of the <Attachment> element (section 2.2.2.6.1) that identifies the method in which the attachment was attached.

The value of this element is an **enumeration** value ([MS-ASDTYPE] section 2.4).

A command response MUST have a maximum of one <Method> element per <Attachment> element.

The <Method> element MUST have no child elements.

The following table defines the valid values of the <Method> enumeration.

Value	Meaning	Notes
1	Normal attachment	The attachment is a normal attachment. This is the most common value.
2	Reserved	Do not use.
3	Reserved	Do not use.
4	Reserved	Do not use.
5	**Embedded message**	Indicates that the attachment is an e-mail message, and that the attachment file has an .eml extension.
6	Attach OLE	Indicates that the attachment is an embedded OLE object, such as an inline image.

2.2.2.6.1.4 EstimatedDataSize

The <EstimatedDataSize> element is required child element of the <Attachment> element (section 2.2.2.6.1).

The value of this element is an **integer** value ([MS-ASDTYPE] section 2.5). If the client includes a noninteger value for this element in a command request, the server responds with a status error of 6.

A command response MUST have a maximum of one <EstimatedDataSize> element per <Attachment> element.

The <EstimatedDataSize> element MUST have no child elements.

The <EstimatedDataSize> value represents the original size of the content in the store and is specified in bytes. The client uses this number only for an informational display to the user. This number is only an estimate, and the actual size of the body when fetched can differ based on the content filtering rules applied. The client does not make any memory allocations based on this number for future requests.

2.2.2.6.1.5 ContentId

The <ContentId> element is an optional child element of the <Attachment> element (section 2.2.2.6.1) that contains the unique object ID for an attachment. This element is provided for informational purposes only and can be ignored by the client.

The value of this element is a **string** value ([MS-ASDTYPE] section 2.6).

A command response MUST have a maximum of one <ContentId> element per <Attachment> element.

The <ContentId> element MUST have no child elements.

2.2.2.6.1.6 ContentLocation

The <ContentLocation> element is an optional child element of the <Attachment> element (section 2.2.2.6.1) that contains the relative URL for an attachment, and is used to match a reference to an inline attachment in an HTML message to the attachment in the attachments table.

The value of this element is a **string** ([MS-ASDTYPE] section 2.6) value.

A command response MUST have a maximum of one <ContentLocation> element per <Attachment> element.

The <ContentLocation> element MUST have no child elements.

2.2.2.6.1.7 IsInline

The <IsInline> element is an optional child element of the <Attachment> element (section 2.2.2.6.1) that specifies whether the attachment is embedded in the message.

The value of this element is a **boolean** value ([MS-ASDTYPE] section 2.1).

A command response MUST have a maximum of one <IsInline> element per <Attachment> element.

The <IsInline> element MUST have no child elements.

2.2.2.7 NativeBodyType

The <NativeBodyType> element is a required child element of the <airsync:ApplicationData> element ([MS-ASCMD] section 2.2.2.19.1.2.1.1.9.1.2) in the **Sync** command that specifies the original format type of the item.

The value of this element is an **enumeration** value ([MS-ASDTYPE] section 2.4). If the client includes a non-enumerated value type for this element, then the server responds with a protocol status error of 6 in a **Sync** command request.

A command response MUST have a maximum of one <NativeBodyType> element per <airsync:ApplicationData> element. Command requests MAY include the <NativeBodyType> element.

The <NativeBodyType> element MUST have no child elements. If a client request includes child elements with this element, then the server responds with a protocol status error of 6 in a **Sync** command request.

The following table defines the valid values of the <NativeBodyType> enumeration.

Enumeration Value	Description
1	Plain text
2	HTML
3	RTF

The <NativeBodyType> and <Type> elements have the same value unless the server has modified the format of the body to match the client's request. The client can specify a preferred body format by using the <Type> element of a **Search** or **Sync** command request.

2.2.3 Groups

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

Attribute	Description
<TopLevelSchemaProps>	Identifies the <Body> element (section 2.2.2.4), <BodyPart> element (section 2.2.2.5), and the <Attachments> element (section 2.2.2.6) as being part of the <TopLevelSchemaProps> group.

2.2.3.1 TopLevelSchemaProps

The <TopLevelSchemaProps> element identifies the <Body> element (section 2.2.2.4), the <BodyPart> element (section 2.2.2.5), and the <Attachments> element (section 2.2.2.6) as being part of the <TopLevelSchemaProps> group.

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 specified in this document.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

None.

3.1.5 Message Processing Events and Sequencing Rules

3.1.5.1 Commands

Command	Description
Fetch	Retrieves an item from the server.
Search	Retrieves entries from the store.
Sync	Synchronizes changes in a collections set between the client and the server.

3.1.5.1.1 ItemOperations

The request message for the **ItemOperations** command can include the following elements:

- <FileReference> (section 2.2.2.1)
- <BodyPreference> (section 2.2.2.2)
  - <Type> (section 2.2.2.2.1)
  - <TruncationSize> (section 2.2.2.2.2)
  - <AllOrNone> (section 2.2.2.2.3)
- <BodyPartPreference> (section 2.2.2.3)
  - <Type> (section 2.2.2.3.1)
  - <TruncationSize> (section 2.2.2.3.2)

- <AllOrNone> (section 2.2.2.3.3)

3.1.5.1.2 Search

The request message for the **Search** command can include the following elements and types:

- <BodyPreference> (section 2.2.2.2)
  - <Type> (section 2.2.2.2.1)
  - <TruncationSize> (section 2.2.2.2.2)
  - <AllOrNone> (section 2.2.2.2.3)
- <BodyPartPreference> (section 2.2.2.3)
  - <Type> (section 2.2.2.3.1)
  - <TruncationSize> (section 2.2.2.3.2)
  - <AllOrNone> (section 2.2.2.3.3)

3.1.5.1.3 Sync

The request message for the **Sync** command can include the following elements and types:

- <BodyPreference> (section 2.2.2.2)
  - <Type> (section 2.2.2.2.1)
  - <TruncationSize> (section 2.2.2.2.2)
  - <AllOrNone> (section 2.2.2.2.3)
  - <Preview> (section 2.2.2.3.4)
- <BodyPartPreference> (section 2.2.2.3)
  - <Type> (section 2.2.2.3.1)
  - <TruncationSize> (section 2.2.2.3.2)
  - <AllOrNone> (section 2.2.2.3.3)
  - <Preview> (section 2.2.2.3.4)
- <Attachments> (section 2.2.2.6)
  - <Attachment> (section 2.2.2.6.1)
    - <FileReference> (section 2.2.2.6.1.2)
    - <Method> (section 2.2.2.6.1.3)
    - <EstimatedDataSize> (section 2.2.2.6.1.4)

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 specified in this document.

The abstract data model used by the server and the client are the same.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

None.

3.2.5 Message Processing Events and Sequencing Rules

3.2.5.1 Commands

Command	Description
Sync	Synchronizes changes in a collections set between the client and the server.

3.2.5.1.1 Sync

The response message for the **Sync** command can include the following:

- <Attachments> (section 2.2.2.6)
  - <Attachment> (section 2.2.2.6.1)
    - <DisplayName> (section 2.2.2.6.1.1)
    - <FileReference> (section 2.2.2.6.1.2)
    - <Method> (section 2.2.2.6.1.3)
    - <EstimatedDataSize> (section 2.2.2.6.1.4)
    - <ContentId> (section 2.2.2.6.1.5)
    - <ContentLocation> (section 2.2.2.6.1.6)

        - <IsInline> (section 2.2.2.6.1.7)
- <Body> (section 2.2.2.4)
    - <Type> (section 2.2.2.4.1)
    - <Truncated> (section 2.2.2.4.3)
    - <Data> (section 2.2.2.4.4)
- BodyPart (section 2.2.2.5)
    - <Type> (section 2.2.2.5.2)
    - <Truncated> (section 2.2.2.5.4)
    - <Data> (section 2.2.2.5.5)
- <NativeBodyType> (section 2.2.2.7)

4 Protocol Examples

For examples of the **Search** command utilizing the AirSyncBase Namespace protocol, see [MS-ASCMD] section 4.11. For examples of the **ItemOperations** command utilizing the AirSyncBase Namespace protocol, see [MS-ASCMD] sections 4.10.2 and 4.10.2.

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:

- Microsoft® Exchange Server 2007 Service Pack 3 (SP3)
- Microsoft® Exchange Server 2010
- Microsoft® Exchange Server 2010 Service Pack 1 (SP1)

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified. 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 prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that product does not follow the prescription.

<1> Section 2.2.2.2.4: The Preview element is not supported when the MS-ASProtocolVersion header is set to 12.1.

<2> Section 2.2.2.3: The <BodyPartPreference> element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<3> Section 2.2.2.3: Only a value of 2 (HTML) in the <Type> element of a <BodyPartPreference> element is supported by the server when the MS-ASProtocolVersion header is set to 14.1. The <BodyPartPreference> element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<4> Section 2.2.2.3.1: The <BodyPartPreference> element is not supported when the MS-ASProtocolVersion header is set to 12.1 or 14.0.

<5> Section 2.2.2.3.1: When the MS-ASProtocolVersion header is set to 14.1, the server only supports a <Type> value of 2 in a **BodyPartPreference** request.

<6> Section 2.2.2.3.4: The <Preview> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

<7> Section 2.2.2.4.5: The <Preview> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

<8> Section 2.2.2.5.6: The <Preview> element is not supported when the MS-ASProtocolVersion header is set to 12.1.

7 Change Tracking

This section identifies changes that were made to the [MS-ASAIRS] protocol document between the May 2010 and August 2010 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
1 Introduction	55552 Removed phrase "complex types".	N	Content removed.
1.1 Glossary	55064 Added "base64 encoding" to list of terms defined in [MS-OXGLOS].	N	New content added.
1.1 Glossary	55028 Removed "property" from the list of terms defined in [MS-OXGLOS].	N	Content removed.
1.2.1 Normative References	55751 Moved [MS-OXGLOS] from Normative References section to Informative References section.	N	Content update.
1.2.1 Normative References	55685 Added reference to [XMLSCHEMA1].	N	New content added.
1.2.1 Normative References	57601 Added references to [MS-ASCNTC], [MS-ASNOTE], and [MS-ASTASK].	N	Content update.
1.3 Overview	55552 Removed phrase "complex types".	N	Content removed.
1.4 Relationship to Other Protocols	55552 Changed phrase "types and elements" to "elements".	N	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1.5 Prerequisites/Preconditions	55028 Changed "properties" to "elements".	N	Content update.
1.6 Applicability Statement	57437 Changed "Fetch" to "ItemOperations".	N	Content update.
2.1 Transport	55028 Changed "properties" to "elements".	N	Content update.
2.1 Transport	57437 Changed "Fetch" to "ItemOperations".	N	Content update.
2.2 Message Syntax	55685 Added references to [XMLNS] and [XMLSCHEMA1].	N	Content update.
2.2 Message Syntax	55144 Moved list of namespaces to separate Namespaces topic.	Y	Content update.
2.2.1 Namespaces	55144 Added new topic.	Y	New content added.
2.2.2 Elements	55552 Added container elements to list of elements. Linked elements to their respective topics. Reordered elements to mimic their layout in the XSD.	Y	New content added.
2.2.2.1 FileReference	55552 Moved information relating to this element's behavior as a child of the Attachment element to a new topic.	Y	Content update.
2.2.2.2 BodyPreference	55552 Changed description of BodyPreference from "complex type" to "element".	N	Content update.
2.2.2.2 BodyPreference	55463 Specified protocol status error when Options is not the parent of BodyPreference.	N	Content update.
2.2.2.2.1 Type	55552 Changed description of BodyPreference from "complex type" to "element". Moved information specific to this element's usage as a child of the BodyPartPreference, Body, and BodyPart elements into separate topics.	Y	Content update.
2.2.2.2.1 Type	48115 Specified the error returned if a non-enumerated value is used. Removed statement about element value extensibility.	Y	Content removed.
2.2.2.2.1	55463	N	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
Type	Specified additional protocol status error information for the different error conditions.		
2.2.2.2.2 TruncationSize	55552 Changed description of BodyPreference from "type" to "element". Moved information specific to the BodyPartPreference parent element into a separate topic.	Y	Content update.
2.2.2.2.2 TruncationSize	55463 Specified additional protocol status error information for the different error conditions.	N	Content update.
2.2.2.2.2 TruncationSize	57437 Changed "Fetch" to "ItemOperations".	N	Content update.
2.2.2.2.3 AllOrNone	55552 Changed description of BodyPreference from "type" to "element". Moved information specific to the BodyPartPreference element to a separate topic.	Y	Content update.
2.2.2.2.3 AllOrNone	55463 Specified additional protocol status error information for the different error conditions.	N	Content update.
2.2.2.2.3 AllOrNone	57373 Clarified how the AllOrNone element behaves when multiple BodyPreference elements also specify a TruncationSize element.	Y	Content update.
2.2.2.2.4 Preview	55552 Changed description of BodyPartPreference from "type" to "element". Moved information specific to BodyPartPreference, Body, and BodyPart elements into new topics.	Y	Content update.
2.2.2.2.4 Preview	55463 Specified additional protocol status error information for the different error conditions.	N	Content update.
2.2.2.3 BodyPartPreference	55552 Changed description of BodyPartPreference from "complex type" to "element". Linked to new topics for child elements.	Y	Content update.
2.2.2.3 BodyPartPreference	57437 Added a product behavior note specifying when this element is not supported.	Y	Content update.
2.2.2.3.1 Type	55552 Added new topic.	Y	New content added.
2.2.2.3.2 TruncationSize	55552 Added new topic.	Y	New content added.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
2.2.2.3.3 AllOrNone	55552 Added new topic.	Y	New content added.
2.2.2.3.4 Preview	55552 Added new topic.	Y	New content added.
2.2.2.4 Body	55552 Changed description of Body from "complex type" to "element".	N	Content update.
2.2.2.4.1 Type	55552 Added new topic.	Y	New content added.
2.2.2.4.2 EstimatedDataSize	55552 Changed description of Body from "type" to "element". Moved information specific to the BodyPart and Attachment parent elements into separate topics.	Y	Content update.
2.2.2.4.2 EstimatedDataSize	55463 Specified additional protocol status error information for the different error conditions.	N	Content update.
2.2.2.4.3 Truncated	55552 Changed description of Body from "type" to "element". Moved information specific to the BodyPart parent element into a separate topic.	Y	Content update.
2.2.2.4.3 Truncated	55463 Specified additional protocol status error information for the different error conditions. Removed statements that did not apply because this element is non-operational in a command request.	N	Content update.
2.2.2.4.4 Data	55552 Changed description of Body from "type" to "element". Moved information specific to the BodyPart parent element into a separate topic.	Y	Content update.
2.2.2.4.4 Data	55064 Specified that element text must be base64 encoded when the Type element is 3 (RTF).	Y	Content update.
2.2.2.4.4 Data	55463 Changed status error returned from 2 to 6 when AllOrNone is specified without a Body element.	N	Content update.
2.2.2.4.5 Preview	55552 Added new topic.	Y	New content added.
2.2.2.5	55552	Y	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
BodyPart	Changed description of BodyPart from "complex type" to "element". Linked to new child element topics.		
2.2.2.5.1 Status	55552 Changed description of BodyPart from "type" to "element". Linked to element references.	N	New content added.
2.2.2.5.2 Type	55552 Added new topic.	Y	New content added.
2.2.2.5.3 EstimatedDataSize	55552 Added new topic.	Y	New content added.
2.2.2.5.4 Truncated	55552 Added new topic.	Y	New content added.
2.2.2.5.5 Data	55552 Added new topic.	Y	New content added.
2.2.2.5.6 Preview	55552 Added new section.	Y	New content added for template compliance.
2.2.2.6 Attachments	55552 Changed description of Attachments from "type" to "element".	N	Content update.
2.2.2.6 Attachments	51580 Changed protocol status error returned by including the Attachments element in a command request from 2 to 6.	Y	Content update.
2.2.2.6.1 Attachment	55552 Changed description of Attachment and Attachments from "type" to "element".	N	Content update.
2.2.2.6.1 Attachment	51580 Changed protocol status error returned by including the Attachments element in a command request from 2 to 6.	Y	Content update.
2.2.2.6.1.1 DisplayName	55552 Changed description of Attachment from "type" to "element".	N	New content added.
2.2.2.6.1.1 DisplayName	51580 Removed statements about not including the element in a command request.	N	Content update.
2.2.2.6.1.2 FileReference	55552 Added new topic.	Y	New content added.
2.2.2.6.1.3	55552	N	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
Method	Changed description of Attachment from "type" to "element".		
2.2.2.6.1.3 Method	51580 Removed statements about not including the element in a command request.	N	Content update.
2.2.2.6.1.4 EstimatedDataSize	55552 Added new topic.	Y	New content added.
2.2.2.6.1.4 EstimatedDataSize	51580 Removed statement describing what happens when this element is included in a request.	N	Content update.
2.2.2.6.1.5 ContentId	55552 Changed description of Attachment from "type" to "element".	N	Content update.
2.2.2.6.1.5 ContentId	51580 Removed statements about not including this element in a command request.	N	Content update.
2.2.2.6.1.6 ContentLocation	55552 Changed description of Attachment from "type" to "element".	N	Content update.
2.2.2.6.1.6 ContentLocation	51580 Removed statements about not including the element in a command request.	N	Content update.
2.2.2.6.1.7 IsInline	55552 Changed description of Attachment from "type" to "element".	N	Content update.
2.2.2.6.1.7 IsInline	51580 Removed statements about not including the element in a command request.	N	Content update.
2.2.2.7 NativeBodyType	55463 Added additional status error details.	N	Content update.
2.2.3 Groups	55552 Changed description of Body, BodyPart, and Attachment from "type" to "element".	N	Content update.
2.2.3 Groups	57437 Changed "Attachment" to "Attachments" and revised associated topic link.	N	Content update.
2.2.3.1 TopLevelSchemaProps	55552 Changed description of Body, BodyPart, and Attachment from "type" to "element".	N	Content update.
2.2.3.1	57437	N	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
TopLevelSchemaProps	Changed "Attachment" to "Attachments" and changed associated topic link.		
3.1.5.1.1 ItemOperations	55552 Reorganized list of links to supported elements for this command. Included links to new element topics.	Y	Content update.
3.1.5.1.1 ItemOperations	57437 Changed "Fetch" to "ItemOperations".	N	Content update.
3.1.5.1.2 Search	55552 Reorganized list of links to supported elements for this command. Included links to new element topics.	Y	Content update.
3.1.5.1.3 Sync	55552 Reorganized list of links to supported elements for this command. Included links to new element topics.	Y	Content update.
3.2.5.1.1 Sync	55552 Re-organized list of links to supported elements for this command. Included links to new element topics.	Y	Content update.
4 Protocol Examples	57437 Changed "Fetch" to "ItemOperations". Revised section links.	N	Content update.
6 Appendix A: Product Behavior	56663 Removed "Beta" from Exchange Server 2010 SP1 product name.	N	Content update.
6 Appendix A: Product Behavior	56981 Changed product behavior note from an RTM version to a service pack.	N	Content update.
2.1 Complex Types	55552 Removed Complex Types section.	Y	Content removed.
2.3 Attributes	55552 Removed Attributes section.	Y	Content removed.
2.5 Attribute Groups	55552 Removed Attribute Groups section.	Y	Content removed.

8 Index