

## [MS-ASWBXML]:

# Exchange ActiveSync: WAP Binary XML (WBXML) Algorithm

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## Revision Summary

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4/10/2009	2.0.0	Major	Updated technical content and applicable product releases.
7/15/2009	3.0.0	Major	Revised and edited for technical content.
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8/4/2010	7.0	Major	Significantly changed the technical content.
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# 1 Introduction

The Exchange ActiveSync: WAP Binary XML (WBXML) Algorithm incorporates **Wireless Application Protocol (WAP) Binary XML (WBXML)** functionality into the ActiveSync protocols by mapping ActiveSync **XML schema** elements to numeric code page values. This enables ActiveSync clients to encode **XML** requests into WBXML for transmission to an ActiveSync server.

Sections 1.6 and 2 of this specification are normative. All other sections and examples in this specification are informative.

## 1.1 Glossary

This document uses the following terms:

**contact:** A person, company, or other entity that is stored in a directory and is associated with one or more unique identifiers and attributes, such as an Internet message address or login name.

**Hypertext Transfer Protocol (HTTP):** An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

**Secure Sockets Layer (SSL):** A security protocol that supports confidentiality and integrity of messages in client and server applications that communicate over open networks. SSL uses two keys to encrypt data—a public key known to everyone and a private or secret key known only to the recipient of the message. SSL supports server and, optionally, client authentication using X.509 certificates. For more information, see [\[X509\]](#). The SSL protocol is precursor to Transport Layer Security (TLS). The TLS version 1.0 specification is based on SSL version 3.0 [\[SSL3\]](#).

**WBXML code page:** A map used to convert XML to Wireless Application Protocol (WAP) Binary XML (WBXML) that specifies the one-to-one relationships between the XML tags of a namespace and the tags' numeric representations called WBXML tokens. Each WBXML code page corresponds to an XML namespace.

**WBXML token:** A single-byte code that represents a specific XML tag.

**Wireless Application Protocol (WAP) Binary XML (WBXML):** A compact binary representation of **XML** that is designed to reduce the transmission size of XML documents over narrowband communication channels.

**XML:** The Extensible Markup Language, as described in [\[XML1.0\]](#).

**XML namespace:** A collection of names that is used to identify elements, types, and attributes in XML documents identified in a URI reference [\[RFC3986\]](#). A combination of XML namespace and local name allows XML documents to use elements, types, and attributes that have the same names but come from different sources. For more information, see [\[XMLNS-2ED\]](#).

**XML schema:** A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by **XML** itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

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

## 1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents

in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the [Errata](#).

### 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](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

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

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

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

[WBXML1.2] Martin, B., and Jano, B., Eds., "WAP Binary XML Content Format", W3C Note, June 1999, <http://www.w3.org/1999/06/NOTE-wbxml-19990624>

### 1.2.2 Informative References

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

[MS-ASCAL] Microsoft Corporation, "[Exchange ActiveSync: Calendar Class Protocol](#)".

[MS-ASCNTC] Microsoft Corporation, "[Exchange ActiveSync: Contact Class Protocol](#)".

[MS-ASDOC] Microsoft Corporation, "[Exchange ActiveSync: Document Class Protocol](#)".

[MS-ASEMAIL] Microsoft Corporation, "[Exchange ActiveSync: Email Class Protocol](#)".

[MS-ASNOTE] Microsoft Corporation, "[Exchange ActiveSync: Notes Class Protocol](#)".

[MS-ASPROV] Microsoft Corporation, "[Exchange ActiveSync: Provisioning Protocol](#)".

[MS-ASRM] Microsoft Corporation, "[Exchange ActiveSync: Rights Management Protocol](#)".

[MS-ASTASK] Microsoft Corporation, "[Exchange ActiveSync: Tasks Class Protocol](#)".

## 1.3 Overview

This algorithm maps ActiveSync **XML schema** elements to numeric code page values for use by the ActiveSync protocols, enabling ActiveSync clients to encode **WBXML** requests for transmission to an ActiveSync server.

This algorithm provides **WBXML tokens** and **WBXML code pages** that allow clients and servers to compress the **XML** tags in request and response messages. WBXML code pages are hard-coded on the server and cannot be changed by the client. The WBXML code pages correspond to **XML namespaces**.

## 1.4 Relationship to Protocols and Other Algorithms

The **XML namespaces** that are used by this algorithm are described in the ActiveSync protocol specifications, as shown in the following table.

The **WBXML code page** numbers in the table are listed in decimal format.

WBXML code page	Specification
WBXML code page 0: AirSync	<a href="#">[MS-ASCMD]</a> section 2.2.1.21
WBXML code page 1: Contacts	<a href="#">[MS-ASCNTC]</a>
WBXML code page 2: Email	<a href="#">[MS-AEMAIL]</a>
WBXML code page 3: AirNotify	(no longer used)
WBXML code page 4: Calendar	<a href="#">[MS-ASCAL]</a>
WBXML code page 5: Move	[MS-ASCMD] section 2.2.1.12
WBXML code page 6: GetItemEstimate	[MS-ASCMD] section 2.2.1.9
WBXML code page 7: FolderHierarchy	[MS-ASCMD] sections 2.2.1.3, 2.2.1.4, 2.2.1.5, 2.2.1.6, and 2.2.1.8
WBXML code page 8: MeetingResponse	[MS-ASCMD] section 2.2.1.11
WBXML code page 9: Tasks	<a href="#">[MS-ASTASK]</a>
WBXML code page 10: ResolveRecipients	[MS-ASCMD] section 2.2.1.15
WBXML code page 11: ValidateCert	[MS-ASCMD] section 2.2.1.22
WBXML code page 12: Contacts2	[MS-ASCNTC]
WBXML code page 13: Ping	[MS-ASCMD] section 2.2.1.13
WBXML code page 14: Provision	<a href="#">[MS-ASPROV]</a>
WBXML code page 15: Search	[MS-ASCMD] section 2.2.1.16
WBXML code page 16: GAL	[MS-ASCMD] section 2.2.1.16
WBXML code page 17: AirSyncBase	<a href="#">[MS-ASAIRS]</a>
WBXML code page 18: Settings	[MS-ASCMD] section 2.2.1.18
WBXML code page 19: DocumentLibrary	<a href="#">[MS-ASDOC]</a>
WBXML code page 20: ItemOperations	[MS-ASCMD] sections 2.2.1.10
WBXML code page 21: ComposeMail	[MS-ASCMD] sections 2.2.1.17, 2.2.1.19, and 2.2.1.20
WBXML code page 22: Email2	[MS-AEMAIL]
WBXML code page 23: Notes	<a href="#">[MS-ASNOTE]</a>
WBXML code page 24: Rights Management	<a href="#">[MS-ASRM]</a>
WBXML code page 25: Find	[MS-ASCMD] section 2.2.1.2

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

## 1.5 Applicability Statement

**WBXML** is used as a compact transmission format for mobile clients, which typically have little memory and bandwidth. WBXML encoding of **XML** tags is appropriate for all messages sent and received by using the ActiveSync protocols.

## 1.6 Standards Assignments

This algorithm uses the global **WBXML tokens** listed in the following table.

Token name	Token	Reference
SWITCH_PAGE	0	<a href="#">[WBXML1.2]</a>
END	1	[WBXML1.2]
ENTITY	2	[WBXML1.2]
STR_I	3	[WBXML1.2]
LITERAL	4	[WBXML1.2]
EXT_I_0	40	[WBXML1.2]
EXT_I_1	41	[WBXML1.2]
EXT_I_2	42	[WBXML1.2]
PI	43	[WBXML1.2]
LITERAL_C	44	[WBXML1.2]
EXT_T_0	80	[WBXML1.2]
EXT_T_1	81	[WBXML1.2]
EXT_T_2	82	[WBXML1.2]
STR_T	83	[WBXML1.2]
LITERAL_A	84	[WBXML1.2]
EXT_0	C0	[WBXML1.2]
EXT_1	C1	[WBXML1.2]
EXT_2	C2	[WBXML1.2]
OPAQUE	C3	[WBXML1.2]
LITERAL_AC	C4	[WBXML1.2]

## 2 Algorithm Details

### 2.1 ActiveSync WBXML Algorithm Details

ActiveSync messages are transported as HTTP **POST** messages, as specified in [\[MS-ASHTTP\]](#), where the body of the message contains **WBXML** formatted data. The WBXML data encodes the **XML** required by the command being communicated in the message. The ActiveSync commands are specified in [\[MS-ASCMD\]](#).

This section specifies the algorithm to encode XML request and response messages into WBXML format and to decode WBXML data into XML request and response messages. This algorithm is used by clients and servers.

#### 2.1.1 Abstract Data Model

None.

#### 2.1.2 Initialization

The **XML** tags in both request and response messages are encoded by using **WBXML** tokenization, as specified in [\[WBXML1.2\]](#). WBXML uses **WBXML code pages** to map XML tags to **WBXML tokens**. WBXML parsers MUST use the WBXML code pages specified in the following sections.

##### 2.1.2.1 Code Pages

This algorithm supports the following **WBXML code pages**.

Code page	XML namespace
0	AirSync
1	Contacts
2	Email
3	AirNotify
4	Calendar
5	Move
6	GetItemEstimate
7	FolderHierarchy
8	MeetingResponse
9	Tasks
10	ResolveRecipients
11	ValidateCert
12	Contacts2
13	Ping



Code page	XML namespace
14	Provision
15	Search
16	Gal
17	AirSyncBase
18	Settings
19	DocumentLibrary
20	ItemOperations
21	ComposeMail
22	Email2
23	Notes
24	RightsManagement
25	Find

#### 2.1.2.1.1 Code Page 0: AirSync

The tags and tokens in **WBXML code page 0** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Sync</b>	0x05	All
<b>Responses</b>	0x06	All
<b>Add</b>	0x07	All
<b>Change</b>	0x08	All
<b>Delete</b>	0x09	All
<b>Fetch</b>	0x0A	All
<b>SyncKey</b>	0x0B	All
<b>ClientId</b>	0x0C	All
<b>ServerId</b>	0x0D	All
<b>Status</b>	0x0E	All
<b>Collection</b>	0x0F	All
<b>Class</b>	0x10	All
<b>CollectionId</b>	0x12	All

Tag name	Token	Protocol versions
<b>GetChanges</b>	0x13	All
<b>MoreAvailable</b>	0x14	All
<b>WindowSize</b>	0x15	All
<b>Commands</b>	0x16	All
<b>Options</b>	0x17	All
<b>FilterType</b>	0x18	All
<b>Truncation</b>	0x19	2.5
<b>Conflict</b>	0x1B	All
<b>Collections</b>	0x1C	All
<b>ApplicationData</b>	0x1D	All
<b>DeletesAsMoves</b>	0x1E	All
<b>Supported</b>	0x20	All
<b>SoftDelete</b>	0x21	All
<b>MIMESupport</b>	0x22	All
<b>MIMETruncation</b>	0x23	All
<b>Wait</b>	0x24	12.1, 14.0, 14.1, 16.0, 16.1
<b>Limit</b>	0x25	12.1, 14.0, 14.1, 16.0, 16.1
<b>Partial</b>	0x26	12.1, 14.0, 14.1, 16.0, 16.1
<b>ConversationMode</b>	0x27	14.0, 14.1, 16.0, 16.1
<b>MaxItems</b>	0x28	14.0, 14.1, 16.0, 16.1
<b>HeartbeatInterval</b>	0x29	14.0, 14.1, 16.0, 16.1

### 2.1.2.1.2 Code Page 1: Contacts

The tags and tokens in **WBXML code page 1** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Anniversary</b>	0x05	All
<b>AssistantName</b>	0x06	All
<b>AssistantPhoneNumber</b>	0x07	All
<b>Birthday</b>	0x08	All

Tag name	Token	Protocol versions
<b>Body</b> — see note 1 following this table	0x09	2.5
<b>BodySize</b>	0x0A	2.5
<b>BodyTruncated</b>	0x0B	2.5
<b>Business2PhoneNumber</b>	0x0C	All
<b>BusinessAddressCity</b>	0x0D	All
<b>BusinessAddressCountry</b>	0x0E	All
<b>BusinessAddressPostalCode</b>	0x0F	All
<b>BusinessAddressState</b>	0x10	All
<b>BusinessAddressStreet</b>	0x11	All
<b>BusinessFaxNumber</b>	0x12	All
<b>BusinessPhoneNumber</b>	0x13	All
<b>CarPhoneNumber</b>	0x14	All
<b>Categories</b>	0x15	All
<b>Category</b>	0x16	All
<b>Children</b>	0x17	All
<b>Child</b>	0x18	All
<b>CompanyName</b>	0x19	All
<b>Department</b>	0x1A	All
<b>Email1Address</b>	0x1B	All
<b>Email2Address</b>	0x1C	All
<b>Email3Address</b>	0x1D	All
<b>FileAs</b>	0x1E	All
<b>FirstName</b>	0x1F	All
<b>Home2PhoneNumber</b>	0x20	All
<b>HomeAddressCity</b>	0x21	All
<b>HomeAddressCountry</b>	0x22	All
<b>HomeAddressPostalCode</b>	0x23	All
<b>HomeAddressState</b>	0x24	All
<b>HomeAddressStreet</b>	0x25	All
<b>HomeFaxNumber</b>	0x26	All
<b>HomePhoneNumber</b>	0x27	All
<b>JobTitle</b>	0x28	All

Tag name	Token	Protocol versions
<b>LastName</b>	0x29	All
<b>MiddleName</b>	0x2A	All
<b>MobilePhoneNumber</b>	0x2B	All
<b>OfficeLocation</b>	0x2C	All
<b>OtherAddressCity</b>	0x2D	All
<b>OtherAddressCountry</b>	0x2E	All
<b>OtherAddressPostalCode</b>	0x2F	All
<b>OtherAddressState</b>	0x30	All
<b>OtherAddressStreet</b>	0x31	All
<b>PagerNumber</b>	0x32	All
<b>RadioPhoneNumber</b>	0x33	All
<b>Spouse</b>	0x34	All
<b>Suffix</b>	0x35	All
<b>Title</b>	0x36	All
<b>WebPage</b>	0x37	All
<b>YomiCompanyName</b>	0x38	All
<b>YomiFirstName</b>	0x39	All
<b>YomiLastName</b>	0x3A	All
<b>Picture</b>	0x3C	All
<b>Alias</b>	0x3D	14.0, 14.1, 16.0, 16.1
<b>WeightedRank</b>	0x3E	14.0, 14.1, 16.0, 16.1

**Note 1:** The **Body** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Body** tag in WBXML code page 1 with protocol versions 12.0, 12.1, 14.0, 14.1, 16.0, and 16.1.

### 2.1.2.1.3 Code Page 2: Email

The tags and tokens in **WBXML code page 2** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Attachment</b>	0x05	2.5
<b>Attachments</b> — see note 1 following this table	0x06	2.5
<b>AttName</b>	0x07	2.5

Tag name	Token	Protocol versions
<b>AttSize</b>	0x08	2.5
<b>Att0id</b>	0x09	2.5
<b>AttMethod</b>	0x0A	2.5
<b>Body</b> — see note 2 following this table	0x0C	2.5
<b>BodySize</b>	0x0D	2.5
<b>BodyTruncated</b>	0x0E	2.5
<b>DateReceived</b>	0x0F	All
<b>DisplayName</b>	0x10	2.5
<b>DisplayTo</b>	0x11	All
<b>Importance</b>	0x12	All
<b>MessageClass</b>	0x13	All
<b>Subject</b>	0x14	All
<b>Read</b>	0x15	All
<b>To</b>	0x16	All
<b>Cc</b>	0x17	All
<b>From</b>	0x18	All
<b>ReplyTo</b>	0x19	All
<b>AllDayEvent</b>	0x1A	All
<b>Categories</b>	0x1B	14.0, 14.1, 16.0, 16.1
<b>Category</b>	0x1C	14.0, 14.1, 16.0, 16.1
<b>DtStamp</b>	0x1D	All
<b>EndTime</b>	0x1E	All
<b>InstanceType</b>	0x1F	All
<b>BusyStatus</b>	0x20	All
<b>Location</b> — see note 3 following this table	0x21	2.5, 12.0, 12.1, 14.0, 14.1
<b>MeetingRequest</b>	0x22	All
<b>Organizer</b>	0x23	All
<b>RecurrenceId</b>	0x24	All
<b>Reminder</b>	0x25	All
<b>ResponseRequested</b>	0x26	All
<b>Recurrences</b>	0x27	All
<b>Recurrence</b>	0x28	All

Tag name	Token	Protocol versions
Type	0x29	All
Until	0x2A	All
Occurrences	0x2B	All
Interval	0x2C	All
DayOfWeek	0x2D	All
DayOfMonth	0x2E	All
WeekOfMonth	0x2F	All
MonthOfYear	0x30	All
StartTime	0x31	All
Sensitivity	0x32	All
TimeZone	0x33	All
GlobalObjId — see note 4 following this table	0x34	2.5, 12.0, 12.1, 14.0, 14.1
ThreadTopic	0x35	All
MIMEData	0x36	2.5
MIMETruncated	0x37	2.5
MIMESize	0x38	2.5
InternetCPID	0x39	All
Flag	0x3A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
Status	0x3B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
ContentClass	0x3C	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
FlagType	0x3D	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
CompleteTime	0x3E	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
DisallowNewTimeProposal	0x3F	14.0, 14.1, 16.0, 16.1

**Note 1:** The **Attachments** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Attachments** tag in WBXML code page 2 with protocol versions 12.0, 12.1, 14.0, 14.1, 16.0, and 16.1.

**Note 2:** The **Body** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Body** tag in WBXML code page 2 with protocol versions 12.0, 12.1, 14.0, 14.1, 16.0, and 16.1.

**Note 3:** The **Location** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Location** tag in WBXML code page 2 with protocol version 16.0 and 16.1.

**Note 4:** The **UID** tag in WBXML code page 4 (Calendar) is used instead of the **GlobalObjId** tag in WBXML code page 2 with protocol version 16.0 and 16.1.

#### 2.1.2.1.4 Code Page 3: AirNotify

WBXML code page 3 is no longer in use.

#### 2.1.2.1.5 Code Page 4: Calendar

The tags and tokens in WBXML code page 4 are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Timezone</b>	0x05	All
<b>AllDayEvent</b>	0x06	All
<b>Attendees</b>	0x07	All
<b>Attendee</b>	0x08	All
<b>Email</b>	0x09	All
<b>Name</b>	0x0A	All
<b>Body</b> — see note 1 following this table	0x0B	2.5
<b>BodyTruncated</b>	0x0C	2.5
<b>BusyStatus</b>	0x0D	All
<b>Categories</b>	0x0E	All
<b>Category</b>	0x0F	All
<b>DtStamp</b>	0x11	All
<b>EndTime</b>	0x12	All
<b>Exception</b>	0x13	All
<b>Exceptions</b>	0x14	All
<b>Deleted</b>	0x15	All
<b>ExceptionStartTime</b>	0x16	2.5, 12.0, 12.1, 14.0, 14.1
<b>Location</b> — see note 2 following this table	0x17	2.5, 12.0, 12.1, 14.0, 14.1
<b>MeetingStatus</b>	0x18	All
<b>OrganizerEmail</b>	0x19	All
<b>OrganizerName</b>	0x1A	All
<b>Recurrence</b>	0x1B	All
<b>Type</b>	0x1C	All
<b>Until</b>	0x1D	All

Tag name	Token	Protocol versions
<b>Occurrences</b>	0x1E	All
<b>Interval</b>	0x1F	All
<b>DayOfWeek</b>	0x20	All
<b>DayOfMonth</b>	0x21	All
<b>WeekOfMonth</b>	0x22	All
<b>MonthOfYear</b>	0x23	All
<b>Reminder</b>	0x24	All
<b>Sensitivity</b>	0x25	All
<b>Subject</b>	0x26	All
<b>StartTime</b>	0x27	All
<b>UID</b>	0x28	All
<b>AttendeeStatus</b>	0x29	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>AttendeeType</b>	0x2A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DisallowNewTimeProposal</b>	0x33	14.0, 14.1, 16.0, 16.1
<b>ResponseRequested</b>	0x34	14.0, 14.1, 16.0, 16.1
<b>AppointmentReplyTime</b>	0x35	14.0, 14.1, 16.0, 16.1
<b>ResponseType</b>	0x36	14.0, 14.1, 16.0, 16.1
<b>CalendarType</b>	0x37	14.0, 14.1, 16.0, 16.1
<b>IsLeapMonth</b>	0x38	14.0, 14.1, 16.0, 16.1
<b>FirstDayOfWeek</b>	0x39	14.1, 16.0, 16.1
<b>OnlineMeetingConfLink</b>	0x3A	14.1, 16.0, 16.1
<b>OnlineMeetingExternalLink</b>	0x3B	14.1, 16.0, 16.1
<b>ClientUid</b>	0x3C	16.0, 16.1

**Note 1:** The **Body** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Body** tag in WBXML code page 4 with protocol versions 12.0, 12.1, 14.0, 14.1, 16.0, and 16.1.

**Note 2:** The **Location** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Location** tag in WBXML code page 4 with protocol version 16.0 and 16.1.

#### 2.1.2.1.6 Code Page 5: Move

The tags and tokens in **WBXML code page 5** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For



details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>MoveItems</b>	0x05	All
<b>Move</b>	0x06	All
<b>SrcMsgId</b>	0x07	All
<b>SrcFldId</b>	0x08	All
<b>DstFldId</b>	0x09	All
<b>Response</b>	0x0A	All
<b>Status</b>	0x0B	All
<b>DstMsgId</b>	0x0C	All

#### 2.1.2.1.7 Code Page 6: GetItemEstimate

The tags and tokens in **WBXML code page 6** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>GetItemEstimate</b>	0x05	All
<b>Collections</b>	0x07	All
<b>Collection</b>	0x08	All
<b>Class</b> — see note 1 following this table	0x09	2.5, 12.0, 12.1
<b>CollectionId</b>	0x0A	All
<b>Estimate</b>	0x0C	All
<b>Response</b>	0x0D	All
<b>Status</b>	0x0E	All

**Note 1:** The **Class** tag in WBXML code page 0 (AirSync) is used instead of the **Class** tag in WBXML code page 6 with protocol versions 14.0, 14.1, 16.0, and 16.1.

#### 2.1.2.1.8 Code Page 7: FolderHierarchy

The tags and tokens in **WBXML code page 7** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Folders</b>	0x05	2.5, 12.0, 12.1
<b>Folder</b>	0x06	2.5, 12.0, 12.1
<b>DisplayName</b>	0x07	All
<b>ServerId</b>	0x08	All
<b>ParentId</b>	0x09	All
<b>Type</b>	0x0A	All
<b>Status</b>	0x0C	All
<b>Changes</b>	0x0E	All
<b>Add</b>	0x0F	All
<b>Delete</b>	0x10	All
<b>Update</b>	0x11	All
<b>SyncKey</b>	0x12	All
<b>FolderCreate</b>	0x13	All
<b>FolderDelete</b>	0x14	All
<b>FolderUpdate</b>	0x15	All
<b>FolderSync</b>	0x16	All
<b>Count</b>	0x17	All

#### 2.1.2.1.9 Code Page 8: MeetingResponse

The tags and tokens in **WBXML code page 8** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>CalendarId</b>	0x05	All
<b>CollectionId</b>	0x06	All
<b>MeetingResponse</b>	0x07	All
<b>RequestId</b>	0x08	All
<b>Request</b>	0x09	All
<b>Result</b>	0x0A	All
<b>Status</b>	0x0B	All
<b>UserResponse</b>	0x0C	All

Tag name	Token	Protocol versions
<b>InstanceId</b>	0x0E	14.1, 16.0, 16.1
<b>ProposedStartTime</b>	0x10	16.1
<b>ProposedEndTime</b>	0x11	16.1
<b>SendResponse</b>	0x12	16.0, 16.1

### 2.1.2.1.10 Code Page 9: Tasks

The tags and tokens in **WBXML code page 9** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Body</b> — see note 1 following this table	0x05	2.5
<b>BodySize</b>	0x06	2.5
<b>BodyTruncated</b>	0x07	2.5
<b>Categories</b>	0x08	All
<b>Category</b>	0x09	All
<b>Complete</b>	0x0A	All
<b>DateCompleted</b>	0x0B	All
<b>DueDate</b>	0x0C	All
<b>UtcDueDate</b>	0x0D	All
<b>Importance</b>	0x0E	All
<b>Recurrence</b>	0x0F	All
<b>Type</b>	0x10	All
<b>Start</b>	0x11	All
<b>Until</b>	0x12	All
<b>Occurrences</b>	0x13	All
<b>Interval</b>	0x14	All
<b>DayOfMonth</b>	0x15	All
<b>DayOfWeek</b>	0x16	All
<b>WeekOfMonth</b>	0x17	All
<b>MonthOfYear</b>	0x18	All
<b>Regenerate</b>	0x19	All

Tag name	Token	Protocol versions
<b>DeadOccur</b>	0x1A	All
<b>ReminderSet</b>	0x1B	All
<b>ReminderTime</b>	0x1C	All
<b>Sensitivity</b>	0x1D	All
<b>StartDate</b>	0x1E	All
<b>UtcStartDate</b>	0x1F	All
<b>Subject</b>	0x20	All
<b>OrdinalDate</b>	0x22	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>SubOrdinalDate</b>	0x23	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>CalendarType</b>	0x24	14.0, 14.1, 16.0, 16.1
<b>IsLeapMonth</b>	0x25	14.0, 14.1, 16.0, 16.1
<b>FirstDayOfWeek</b>	0x26	14.1, 16.0, 16.1

**Note 1:** The **Body** tag in WBXML code page 17 (AirSyncBase) is used instead of the **Body** tag in WBXML code page 9 with protocol versions 12.0, 12.1, 14.0, 14.1, 16.0, and 16.1.

#### 2.1.2.1.11 Code Page 10: ResolveRecipients

The tags and tokens in **WBXML code page 10** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>ResolveRecipients</b>	0x05	All
<b>Response</b>	0x06	All
<b>Status</b>	0x07	All
<b>Type</b>	0x08	All
<b>Recipient</b>	0x09	All
<b>DisplayName</b>	0x0A	All
<b>EmailAddress</b>	0x0B	All
<b>Certificates</b>	0x0C	All
<b>Certificate</b>	0x0D	All
<b>MiniCertificate</b>	0x0E	All
<b>Options</b>	0x0F	All
<b>To</b>	0x10	All

Tag name	Token	Protocol versions
<b>CertificateRetrieval</b>	0x11	All
<b>RecipientCount</b>	0x12	All
<b>MaxCertificates</b>	0x13	All
<b>MaxAmbiguousRecipients</b>	0x14	All
<b>CertificateCount</b>	0x15	All
<b>Availability</b>	0x16	14.0, 14.1, 16.0, 16.1
<b>StartTime</b>	0x17	14.0, 14.1, 16.0, 16.1
<b>EndTime</b>	0x18	14.0, 14.1, 16.0, 16.1
<b>MergedFreeBusy</b>	0x19	14.0, 14.1, 16.0, 16.1
<b>Picture</b>	0x1A	14.1, 16.0, 16.1
<b>MaxSize</b>	0x1B	14.1, 16.0, 16.1
<b>Data</b>	0x1C	14.1, 16.0, 16.1
<b>MaxPictures</b>	0x1D	14.1, 16.0, 16.1

#### 2.1.2.1.12 Code Page 11: ValidateCert

The tags and tokens in **WBXML code page 11** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>ValidateCert</b>	0x05	All
<b>Certificates</b>	0x06	All
<b>Certificate</b>	0x07	All
<b>CertificateChain</b>	0x08	All
<b>CheckCRL</b>	0x09	All
<b>Status</b>	0x0A	All

#### 2.1.2.1.13 Code Page 12: Contacts2

The tags and tokens in **WBXML code page 12** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>CustomerId</b>	0x05	All
<b>GovernmentId</b>	0x06	All
<b>IMAddress</b>	0x07	All
<b>IMAddress2</b>	0x08	All
<b>IMAddress3</b>	0x09	All
<b>ManagerName</b>	0x0A	All
<b>CompanyMainPhone</b>	0x0B	All
<b>AccountName</b>	0x0C	All
<b>NickName</b>	0x0D	All
<b>MMS</b>	0x0E	All

#### 2.1.2.1.14 Code Page 13: Ping

The tags and tokens in **WBXML code page 13** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Ping</b>	0x05	All
<b>Status</b>	0x07	All
<b>HeartbeatInterval</b>	0x08	All
<b>Folders</b>	0x09	All
<b>Folder</b>	0x0A	All
<b>Id</b>	0x0B	All
<b>Class</b>	0x0C	All
<b>MaxFolders</b>	0x0D	All

#### 2.1.2.1.15 Code Page 14: Provision

The tags and tokens in **WBXML code page 14** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Provision</b>	0x05	All

Tag name	Token	Protocol versions
<b>Policies</b>	0x06	All
<b>Policy</b>	0x07	All
<b>PolicyType</b>	0x08	All
<b>PolicyKey</b>	0x09	All
<b>Data</b>	0x0A	All
<b>Status</b>	0x0B	All
<b>RemoteWipe</b>	0x0C	All
<b>EASProvisionDoc</b>	0x0D	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DevicePasswordEnabled</b>	0x0E	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>AlphanumericDevicePasswordRequired</b>	0x0F	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireStorageCardEncryption</b>	0x10	12.1, 14.0, 14.1, 16.0, 16.1
<b>PasswordRecoveryEnabled</b>	0x11	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>AttachmentsEnabled</b>	0x13	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>MinDevicePasswordLength</b>	0x14	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxInactivityTimeDeviceLock</b>	0x15	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxDevicePasswordFailedAttempts</b>	0x16	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxAttachmentSize</b>	0x17	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowSimpleDevicePassword</b>	0x18	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DevicePasswordExpiration</b>	0x19	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DevicePasswordHistory</b>	0x1A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowStorageCard</b>	0x1B	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowCamera</b>	0x1C	12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireDeviceEncryption</b>	0x1D	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowUnsignedApplications</b>	0x1E	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowUnsignedInstallationPackages</b>	0x1F	12.1, 14.0, 14.1, 16.0, 16.1
<b>MinDevicePasswordComplexCharacters</b>	0x20	12.1, 14.0, 14.1, 16.0, 16.1

Tag name	Token	Protocol versions
<b>AllowWiFi</b>	0x21	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowTextMessaging</b>	0x22	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowPOPIMAPEmail</b>	0x23	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowBluetooth</b>	0x24	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowIrDA</b>	0x25	12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireManualSyncWhenRoaming</b>	0x26	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowDesktopSync</b>	0x27	12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxCalendarAgeFilter</b>	0x28	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowHTMLEmail</b>	0x29	12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxEmailAgeFilter</b>	0x2A	12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxEmailBodyTruncationSize</b>	0x2B	12.1, 14.0, 14.1, 16.0, 16.1
<b>MaxEmailHTMLBodyTruncationSize</b>	0x2C	12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireSignedSMIMEMessages</b>	0x2D	12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireEncryptedSMIMEMessages</b>	0x2E	12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireSignedSMIMEAlgorithm</b>	0x2F	12.1, 14.0, 14.1, 16.0, 16.1
<b>RequireEncryptionSMIMEAlgorithm</b>	0x30	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowSMIMEEncryptionAlgorithmNegotiation</b>	0x31	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowSMIMESoftCerts</b>	0x32	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowBrowser</b>	0x33	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowConsumerEmail</b>	0x34	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowRemoteDesktop</b>	0x35	12.1, 14.0, 14.1, 16.0, 16.1
<b>AllowInternetSharing</b>	0x36	12.1, 14.0, 14.1, 16.0, 16.1
<b>UnapprovedInROMApplicationList</b>	0x37	12.1, 14.0, 14.1, 16.0, 16.1
<b>ApplicationName</b>	0x38	12.1, 14.0, 14.1, 16.0, 16.1
<b>ApprovedApplicationList</b>	0x39	12.1, 14.0, 14.1, 16.0, 16.1
<b>Hash</b>	0x3A	12.1, 14.0, 14.1, 16.0, 16.1
<b>AccountOnlyRemoteWipe</b>	0x3B	16.1

#### 2.1.2.1.16 Code Page 15: Search

The tags and tokens in **WBXML code page 15** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).



Tag name	Token	Protocol versions
<b>Search</b>	0x05	All
<b>Store</b>	0x07	All
<b>Name</b>	0x08	All
<b>Query</b>	0x09	All
<b>Options</b>	0x0A	All
<b>Range</b>	0x0B	All
<b>Status</b>	0x0C	All
<b>Response</b>	0x0D	All
<b>Result</b>	0x0E	All
<b>Properties</b>	0x0F	All
<b>Total</b>	0x10	All
<b>EqualTo</b>	0x11	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Value</b>	0x12	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>And</b>	0x13	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Or</b>	0x14	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>FreeText</b>	0x15	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DeepTraversal</b>	0x17	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>LongId</b>	0x18	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>RebuildResults</b>	0x19	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>LessThan</b>	0x1A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>GreaterThan</b>	0x1B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>UserName</b>	0x1E	12.1, 14.0, 14.1, 16.0, 16.1
<b>Password</b>	0x1F	12.1, 14.0, 14.1, 16.0, 16.1
<b>ConversationId</b>	0x20	14.0, 14.1, 16.0, 16.1
<b>Picture</b>	0x21	14.1, 16.0, 16.1
<b>MaxSize</b>	0x22	14.1, 16.0, 16.1
<b>MaxPictures</b>	0x23	14.1, 16.0, 16.1

### 2.1.2.1.17 Code Page 16: GAL

The tags and tokens in **WBXML code page 16** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>DisplayName</b>	0x05	All
<b>Phone</b>	0x06	All
<b>Office</b>	0x07	All
<b>Title</b>	0x08	All
<b>Company</b>	0x09	All
<b>Alias</b>	0x0A	All
<b>FirstName</b>	0x0B	All
<b>LastName</b>	0x0C	All
<b>HomePhone</b>	0x0D	All
<b>MobilePhone</b>	0x0E	All
<b>EmailAddress</b>	0x0F	All
<b>Picture</b>	0x10	14.1, 16.0, 16.1
<b>Status</b>	0x11	14.1, 16.0, 16.1
<b>Data</b>	0x12	14.1, 16.0, 16.1

### 2.1.2.1.18 Code Page 17: AirSyncBase

The tags and tokens in **WBXML code page 17** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>BodyPreference</b>	0x05	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Type</b>	0x06	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>TruncationSize</b>	0x07	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>AllOrNone</b>	0x08	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Body</b>	0x0A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Data</b>	0x0B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1

Tag name	Token	Protocol versions
<b>EstimatedDataSize</b>	0x0C	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Truncated</b>	0x0D	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Attachments</b>	0x0E	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Attachment</b>	0x0F	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DisplayName</b>	0x10	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>FileReference</b>	0x11	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Method</b>	0x12	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>ContentId</b>	0x13	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>ContentLocation</b>	0x14	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>IsInline</b>	0x15	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>NativeBodyType</b>	0x16	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>ContentType</b>	0x17	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Preview</b>	0x18	14.0, 14.1, 16.0, 16.1
<b>BodyPartPreference</b>	0x19	14.1, 16.0, 16.1
<b>BodyPart</b>	0x1A	14.1, 16.0, 16.1
<b>Status</b>	0x1B	14.1, 16.0, 16.1
<b>Add</b>	0x1C	16.0, 16.1
<b>Delete</b>	0x1D	16.0, 16.1
<b>ClientId</b>	0x1E	16.0, 16.1
<b>Content</b>	0x1F	16.0, 16.1
<b>Location</b>	0x20	16.0, 16.1
<b>Annotation</b>	0x21	16.0, 16.1
<b>Street</b>	0x22	16.0, 16.1
<b>City</b>	0x23	16.0, 16.1
<b>State</b>	0x24	16.0, 16.1
<b>Country</b>	0x25	16.0, 16.1
<b>PostalCode</b>	0x26	16.0, 16.1
<b>Latitude</b>	0x27	16.0, 16.1
<b>Longitude</b>	0x28	16.0, 16.1
<b>Accuracy</b>	0x29	16.0, 16.1
<b>Altitude</b>	0x2A	16.0, 16.1
<b>AltitudeAccuracy</b>	0x2B	16.0, 16.1

Tag name	Token	Protocol versions
LocationUri	0x2C	16.0, 16.1
InstanceId	0x2D	16.0, 16.1

#### 2.1.2.1.19 Code Page 18: Settings

The tags and tokens in **WBXML code page 18** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
Settings	0x05	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
Status	0x06	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
Get	0x07	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
Set	0x08	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
Oof	0x09	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
OofState	0x0A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
StartTime	0x0B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
EndTime	0x0C	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
OofMessage	0x0D	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
AppliesToInternal	0x0E	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
AppliesToExternalKnown	0x0F	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
AppliesToExternalUnknown	0x10	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
Enabled	0x11	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
ReplyMessage	0x12	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
BodyType	0x13	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
DevicePassword	0x14	12.0, 12.1, 14.0, 14.1, 16.0,

Tag name	Token	Protocol versions
		16.1
<b>Password</b>	0x15	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DeviceInformation</b>	0x16	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Model</b>	0x17	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>IMEI</b>	0x18	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>FriendlyName</b>	0x19	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>OS</b>	0x1A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>OSLanguage</b>	0x1B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>PhoneNumber</b>	0x1C	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>UserInformation</b>	0x1D	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>EmailAddresses</b>	0x1E	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>SMTPAddress</b>	0x1F	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>UserAgent</b>	0x20	12.1, 14.0, 14.1, 16.0, 16.1
<b>EnableOutboundSMS</b>	0x21	14.0, 14.1, 16.0, 16.1
<b>MobileOperator</b>	0x22	14.0, 14.1, 16.0, 16.1
<b>PrimarySmtpAddress</b>	0x23	14.1, 16.0, 16.1
<b>Accounts</b>	0x24	14.1, 16.0, 16.1
<b>Account</b>	0x25	14.1, 16.0, 16.1
<b>AccountId</b>	0x26	14.1, 16.0, 16.1
<b>AccountName</b>	0x27	14.1, 16.0, 16.1
<b>UserDisplayName</b>	0x28	14.1, 16.0, 16.1
<b>SendDisabled</b>	0x29	14.1, 16.0, 16.1
<b>RightsManagementInformation</b>	0x2B	14.1, 16.0, 16.1

#### 2.1.2.1.20 Code Page 19: DocumentLibrary

The tags and tokens in **WBXML code page 19** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>LinkId</b>	0x05	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DisplayName</b>	0x06	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>IsFolder</b>	0x07	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>CreationDate</b>	0x08	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>LastModifiedDate</b>	0x09	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>IsHidden</b>	0x0A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>ContentLength</b>	0x0B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>ContentType</b>	0x0C	12.0, 12.1, 14.0, 14.1, 16.0, 16.1

#### 2.1.2.1.21 Code Page 20: ItemOperations

The tags and tokens in **WBXML code page 20** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>ItemOperations</b>	0x05	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Fetch</b>	0x06	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Store</b>	0x07	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Options</b>	0x08	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Range</b>	0x09	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Total</b>	0x0A	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Properties</b>	0x0B	12.0, 12.1, 14.0, 14.1, 16.0, 16.1

Tag name	Token	Protocol versions
<b>Data</b>	0x0C	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Status</b>	0x0D	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Response</b>	0x0E	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Version</b>	0x0F	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Schema</b>	0x10	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>Part</b>	0x11	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>EmptyFolderContents</b>	0x12	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>DeleteSubFolders</b>	0x13	12.0, 12.1, 14.0, 14.1, 16.0, 16.1
<b>UserName</b>	0x14	12.1, 14.0, 14.1, 16.0, 16.1
<b>Password</b>	0x15	12.1, 14.0, 14.1, 16.0, 16.1
<b>Move</b>	0x16	14.0, 14.1, 16.0, 16.1
<b>DstFldId</b>	0x17	14.0, 14.1, 16.0, 16.1
<b>ConversationId</b>	0x18	14.0, 14.1, 16.0, 16.1
<b>MoveAlways</b>	0x19	14.0, 14.1, 16.0, 16.1

### 2.1.2.1.22 Code Page 21: ComposeMail

The tags and tokens in **WBXML code page 21** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>SendMail</b>	0x05	14.0, 14.1, 16.0, 16.1
<b>SmartForward</b>	0x06	14.0, 14.1, 16.0, 16.1
<b>SmartReply</b>	0x07	14.0, 14.1, 16.0, 16.1
<b>SaveInSentItems</b>	0x08	14.0, 14.1, 16.0, 16.1
<b>ReplaceMime</b>	0x09	14.0, 14.1, 16.0, 16.1
<b>Source</b>	0x0B	14.0, 14.1, 16.0, 16.1
<b>FolderId</b>	0x0C	14.0, 14.1, 16.0, 16.1

Tag name	Token	Protocol versions
<b>ItemId</b>	0x0D	14.0, 14.1, 16.0, 16.1
<b>LongId</b>	0x0E	14.0, 14.1, 16.0, 16.1
<b>InstanceId</b>	0x0F	14.0, 14.1, 16.0, 16.1
<b>Mime</b>	0x10	14.0, 14.1, 16.0, 16.1
<b>ClientId</b>	0x11	14.0, 14.1, 16.0, 16.1
<b>Status</b>	0x12	14.0, 14.1, 16.0, 16.1
<b>AccountId</b>	0x13	14.1, 16.0, 16.1
<b>Forwardees</b>	0x15	16.0, 16.1
<b>Forwardee</b>	0x16	16.0, 16.1
<b>ForwardeeName</b>	0x17	16.0, 16.1
<b>ForwardeeEmail</b>	0x18	16.0, 16.1

#### 2.1.2.1.23 Code Page 22: Email2

The tags and tokens in **WBXML code page 22** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>UmCallerID</b>	0x05	14.0, 14.1, 16.0, 16.1
<b>UmUserNotes</b>	0x06	14.0, 14.1, 16.0, 16.1
<b>UmAttDuration</b>	0x07	14.0, 14.1, 16.0, 16.1
<b>UmAttOrder</b>	0x08	14.0, 14.1, 16.0, 16.1
<b>ConversationId</b>	0x09	14.0, 14.1, 16.0, 16.1
<b>ConversationIndex</b>	0x0A	14.0, 14.1, 16.0, 16.1
<b>LastVerbExecuted</b>	0x0B	14.0, 14.1, 16.0, 16.1
<b>LastVerbExecutionTime</b>	0x0C	14.0, 14.1, 16.0, 16.1
<b>ReceivedAsBcc</b>	0x0D	14.0, 14.1, 16.0, 16.1
<b>Sender</b>	0x0E	14.0, 14.1, 16.0, 16.1
<b>CalendarType</b>	0x0F	14.0, 14.1, 16.0, 16.1
<b>IsLeapMonth</b>	0x10	14.0, 14.1, 16.0, 16.1
<b>AccountId</b>	0x11	14.1, 16.0, 16.1
<b>FirstDayOfWeek</b>	0x12	14.1, 16.0, 16.1



Tag name	Token	Protocol versions
<b>MeetingMessageType</b>	0x13	14.1, 16.0, 16.1
<b>IsDraft</b>	0x15	16.0, 16.1
<b>Bcc</b>	0x16	16.0, 16.1
<b>Send</b>	0x17	16.0, 16.1

#### 2.1.2.1.24 Code Page 23: Notes

The tags and tokens in **WBXML code page 23** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Subject</b>	0x05	14.0, 14.1, 16.0, 16.1
<b>MessageClass</b>	0x06	14.0, 14.1, 16.0, 16.1
<b>LastModifiedDate</b>	0x07	14.0, 14.1, 16.0, 16.1
<b>Categories</b>	0x08	14.0, 14.1, 16.0, 16.1
<b>Category</b>	0x09	14.0, 14.1, 16.0, 16.1

#### 2.1.2.1.25 Code Page 24: RightsManagement

The tags and tokens in **WBXML code page 24** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>RightsManagementSupport</b>	0x05	14.1, 16.0, 16.1
<b>RightsManagementTemplates</b>	0x06	14.1, 16.0, 16.1
<b>RightsManagementTemplate</b>	0x07	14.1, 16.0, 16.1
<b>RightsManagementLicense</b>	0x08	14.1, 16.0, 16.1
<b>EditAllowed</b>	0x09	14.1, 16.0, 16.1
<b>ReplyAllowed</b>	0x0A	14.1, 16.0, 16.1
<b>ReplyAllAllowed</b>	0x0B	14.1, 16.0, 16.1
<b>ForwardAllowed</b>	0x0C	14.1, 16.0, 16.1
<b>ModifyRecipientsAllowed</b>	0x0D	14.1, 16.0, 16.1
<b>ExtractAllowed</b>	0x0E	14.1, 16.0, 16.1

Tag name	Token	Protocol versions
<b>PrintAllowed</b>	0x0F	14.1, 16.0, 16.1
<b>ExportAllowed</b>	0x10	14.1, 16.0, 16.1
<b>ProgrammaticAccessAllowed</b>	0x11	14.1, 16.0, 16.1
<b>Owner</b>	0x12	14.1, 16.0, 16.1
<b>ContentExpiryDate</b>	0x13	14.1, 16.0, 16.1
<b>TemplateID</b>	0x14	14.1, 16.0, 16.1
<b>TemplateName</b>	0x15	14.1, 16.0, 16.1
<b>TemplateDescription</b>	0x16	14.1, 16.0, 16.1
<b>ContentOwner</b>	0x17	14.1, 16.0, 16.1
<b>RemoveRightsManagementProtection</b>	0x18	14.1, 16.0, 16.1

#### 2.1.2.1.26 Code Page 25: Find

The tags and tokens in **WBXML code page 25** are listed in the following table. The ActiveSync protocol versions that support each tag/token are specified in the "Protocol versions" column of the table. For details about the ActiveSync protocol versions that can be used by a client or a server, see [\[MS-ASHTTP\]](#).

Tag name	Token	Protocol versions
<b>Find</b>	0x05	16.1
<b>SearchId</b>	0x06	16.1
<b>ExecuteSearch</b>	0x07	16.1
<b>MailBoxSearchCriterion</b>	0x08	16.1
<b>Query</b>	0x09	16.1
<b>Status</b>	0x0A	16.1
<b>FreeText</b>	0x0B	16.1
<b>Options</b>	0x0C	16.1
<b>Range</b>	0x0D	16.1
<b>DeepTraversal</b>	0x0E	16.1
<b>Response</b>	0x11	16.1
<b>Result</b>	0x12	16.1
<b>Properties</b>	0x13	16.1
<b>Preview</b>	0x14	16.1
<b>HasAttachments</b>	0x15	16.1

Tag name	Token	Protocol versions
<b>Total</b>	0x16	16.1
<b>DisplayCc</b>	0x17	16.1
<b>DisplayBcc</b>	0x18	16.1
<b>GalSearchCriterion</b>	0x19	16.1

### 2.1.3 Processing Rules

The processing rules for this algorithm are specified in [\[WBXML1.2\]](#).

This algorithm uses the following features that are specified in [WBXML1.2]:

- **WBXML tokens** to encode **XML** tags
- **WBXML code pages** to support multiple **XML namespaces**
- Inline strings
- Opaque data

This algorithm does not use the following features that are specified in [WBXML1.2]:

- String tables
- Entities
- Processing instructions
- Attribute encoding

### 3 Algorithm Examples

The following example shows the **WBXML** encoding of a server response that contains a new **contact** and provides a byte-by-byte description of the encoding.

The following **XML** represents a server response to a request to create a new contact.

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync" xmlns:airsyncbase="AirSyncBase" xmlns:contacts="Contacts">
  <Collections>
    <Collection>
      <Class>Contacts</Class>
      <SyncKey>2</SyncKey>
      <CollectionId>2</CollectionId>
      <Status>1</Status>
      <Commands>
        <Add>
          <ServerId>2:1</ServerId>
          <ApplicationData>
            <airsyncbase:Body>
              <airsyncbase:Type>1</airsyncbase:Type>
              <airsyncbase:EstimatedDataSize>0</airsyncbase:EstimatedDataSize>
              <airsyncbase:Truncated>1</airsyncbase:Truncated>
            </airsyncbase:Body>
            <contacts:FileAs>Funk, Don</contacts:FileAs>
            <contacts:FirstName>Don</contacts:FirstName>
            <contacts:LastName>Funk</contacts:LastName>
            <airsyncbase:NativeBodyType>1</airsyncbase:NativeBodyType>
          </ApplicationData>
        </Add>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

The Exchange ActiveSync: WAP Binary XML (WBXML) Algorithm encodes this XML as the following WBXML encoding.

```
03 01 6A 00 45 5C 4F 50 03 43 6F 6E 74 61 63 74 73 00 01 4B 03 32 00 01 52 03 32 00 01 4E 03
31 00 01 56 47 4D 03 32 3A 31 00 01 5D 00 11 4A 46 03 31 00 01 4C 03 30 00 01 4D 03 31 00 01
01 00 01 5E 03 46 75 6E 6B 2C 20 44 6F 6E 00 01 5F 03 44 6F 6E 00 01 69 03 46 75 6E 6B 00 01
00 11 56 03 31 00 01 01 01 01 01 01 01
```

The following table explains each byte in the WBXML encoding.

Bytes	Description
03	Version number – WBXML version 1.3
01	Unknown public identifier
6A	Charset = UTF-8
00	String table length
45	<airsync:Sync>, with content (0x05 + 0x40)
5C	<airsync:Collections>, with content
4F	<airsync:Collection>, with content

Bytes	Description
50	<airsync:Class>, with content
03	Inline string follows
43 6F 6E 74 61 63 74 73 00	"contacts" (the 00 is the end of the string)
01	</airsync:Class>
4B	<airsync:SyncKey>, with content
03	Inline string follows
32 00	"2"
01	</airsync:SyncKey>
52	<airsync:CollectionID>, with content
03	Inline string follows
32 00	"2"
01	</airsync:CollectionID>
4E	<airsync:Status>, with content
03	Inline string follows
31 00	"1"
01	</airsync:Status>
56	<airsync:Commands>, with content
47	<airsync:Add>, with content
4D	<airsync:ServerId>, with content
03	Inline string follows
32 3A 31 00	"2:1"
01	</airsync:ServerId>
5D	<airsync:ApplicationData>, with content
00 11	Select <b>WBXML code page 17</b> (AirSyncBase)
4A	<airsyncbase:Body>, with content
46	<airsyncbase:Type>, with content
03	Inline string follows
31 00	"1"
01	</airsyncbase:Type>
4C	<airsyncbase:EstimatedDataSize>, with content
03	Inline string follows
30 00	"0"

Bytes	Description
01	</airsyncbase:EstimatedDataSize>
4D	<airsyncbase:Truncated>, with content
03	Inline string follows
31 00	"1"
01	</airsyncbase:Truncated>
01	</airsyncbase:Body>
00 01	Select WBXML code page 1 (Contacts)
5E	<contacts:FileAs>, with content
03	Inline string follows
46 75 6E 6B 2C 20 44 6F 6E 00	"Funk, Don"
01	</contacts:FileAs>
5F	<contacts:FirstName>, with content
03	Inline string follows
44 6F 6E 00	"Don"
01	</contacts:FirstName>
69	<contacts:LastName>, with content
03	Inline string follows
46 75 6E 6B 00	"Funk"
01	</contacts:LastName>
00 11	Select WBXML code page 17 (AirSyncBase)
56	<airsyncbase:NativeBodyType>, with content
03	Inline string follows
31 00	"1"
01	</airsyncbase:NativeBodyType>
01	</airsync:ApplicationData>
01	</airsync:Add>
01	</airsync:Commands>
01	</airsync:Collection>
01	</airsync:Collections>
01	</airsync:Sync>

## 4 Security

### 4.1 Security Considerations for Implementers

In most cases, all communication between the client and server happens across an **HTTP** connection secured by the **Secure Sockets Layer (SSL)** protocol. The SSL connection is assumed to be secure enough to transmit confidential data, such as user credentials and sensitive e-mail. The SSL certificate on the server is assumed to be trusted by the client application.

### 4.2 Index of Security Parameters

None.

## 5 Appendix A: Product Behavior

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

- Microsoft Exchange Server 2007 Service Pack 1 (SP1)
- Microsoft Exchange Server 2010
- Microsoft Exchange Server 2013
- Microsoft Exchange Server 2016
- Windows 8.1
- Windows Communication Apps
- Windows 10 operating system

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

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



## 6 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

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.
- A document revision that captures changes to protocol functionality.

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 **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

The changes made to this document are listed in the following table. For more information, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

Section	Description	Revision class
<a href="#">2.1.2.1.26</a> Code Page 25: Find	Added tag and token for GALSearchCriterion.	Major

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