

[MS-ASWBXML]: Exchange ActiveSync: WAP Binary XML (WBXML) Algorithm

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Revision Summary

| Date | Revision History | Revision Class | Comments |
|------------|------------------|----------------|--|
| 12/03/2008 | 1.0.0 | Major | Initial Release. |
| 04/10/2009 | 2.0.0 | Major | Updated technical content and applicable product releases. |
| 07/15/2009 | 3.0.0 | Major | Revised and edited for technical content. |
| 11/04/2009 | 4.0.0 | Major | Updated and revised the technical content. |
| 02/10/2010 | 5.0.0 | Major | Updated and revised the technical content. |
| 05/05/2010 | 6.0.0 | Major | Updated and revised the technical content. |
| 08/04/2010 | 7.0 | Major | Significantly changed the technical content. |
| 11/03/2010 | 8.0 | Major | Significantly changed the technical content. |
| 03/18/2011 | 8.1 | Minor | Clarified the meaning of the technical content. |
| 08/05/2011 | 9.0 | Major | Significantly changed the technical content. |
| 10/07/2011 | 10.0 | Major | Significantly changed the technical content. |
| 01/20/2012 | 11.0 | Major | Significantly changed the technical content. |
| 04/27/2012 | 11.1 | Minor | Clarified the meaning of the technical content. |
| 07/16/2012 | 12.0 | Major | Significantly changed the technical content. |
| 10/08/2012 | 12.1 | Minor | Clarified the meaning of the technical content. |
| 02/11/2013 | 12.1 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 07/26/2013 | 13.0 | Major | Significantly changed the technical content. |
| 11/18/2013 | 13.0 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 02/10/2014 | 13.0 | No change | No changes to the meaning, language, or formatting of the technical content. |
| 04/30/2014 | 14.0 | Major | Significantly changed the technical content. |
| 07/31/2014 | 14.0 | No change | No changes to the meaning, language, or formatting of 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.

Section 2 of this specification is normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in [\[RFC2119\]](#). Section 1.6 is also normative but does not contain those terms. All other sections and examples in this specification are informative.

1.1 Glossary

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

Hypertext Transfer Protocol (HTTP)
Secure Sockets Layer (SSL)
XML
XML namespace

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

contact
WBXML code page
Wireless Application Protocol (WAP) Binary XML (WBXML)
XML schema

The following terms are specific to this document:

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

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

1.2 References

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

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.

[MS-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-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](#)".
- [MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)".
- [MS-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)".
- [MS-OXPROTO] Microsoft Corporation, "[Exchange Server Protocols System Overview](#)".

1.3 Overview

This 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 | [MS-ASCMD] section 2.2.2.20 |
| WBXML code page 1: Contacts | [MS-ASCNTC] |
| WBXML code page 2: Email | [MS-ASEMAIL] |
| WBXML code page 3: AirNotify | (no longer used) |
| WBXML code page 4: Calendar | [MS-ASCAL] |
| WBXML code page 5: Move | [MS-ASCMD] section 2.2.2.11 |
| WBXML code page 6: GetItemEstimate | [MS-ASCMD] section 2.2.2.8 |

| WBXML code page | Specification |
|---------------------------------------|---|
| WBXML code page 7: FolderHierarchy | [MS-ASCMD] sections 2.2.2.2 , 2.2.2.3 , 2.2.2.4 , and 2.2.2.5 |
| WBXML code page 8: MeetingResponse | [MS-ASCMD] section 2.2.2.10 |
| WBXML code page 9: Tasks | [MS-ASTASK] |
| WBXML code page 10: ResolveRecipients | [MS-ASCMD] section 2.2.2.14 |
| WBXML code page 11: ValidateCert | [MS-ASCMD] section 2.2.2.21 |
| WBXML code page 12: Contacts2 | [MS-ASCNTC] |
| WBXML code page 13: Ping | [MS-ASCMD] section 2.2.2.12 |
| WBXML code page 14: Provision | [MS-ASPROV] |
| WBXML code page 15: Search | [MS-ASCMD] section 2.2.2.15 |
| WBXML code page 16: GAL | [MS-ASCMD] sections 2.2.2.14 and 2.2.2.15 |
| WBXML code page 17: AirSyncBase | [MS-ASAIRS] |
| WBXML code page 18: Settings | [MS-ASCMD] section 2.2.2.17 |
| WBXML code page 19: DocumentLibrary | [MS-ASCMD] sections 2.2.2.9 and 2.2.2.15 |
| WBXML code page 20: ItemOperations | [MS-ASCMD] sections 2.2.2.9 |
| WBXML code page 21: ComposeMail | [MS-ASCMD] sections 2.2.2.16 , 2.2.2.18 , and 2.2.2.19 |
| WBXML code page 22: Email2 | [MS-AEMAIL] |
| WBXML code page 23: Notes | [MS-ASNOTE] |
| WBXML code page 24: Rights Management | [MS-ASRM] |

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 | [WBXML1.2] |
| END | 1 | [WBXML1.2] |
| ENTITY | 2 | [WBXML1.2] |

| Token name | Token | Reference |
|------------|-------|----------------------------|
| 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 |

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 |
|---------------------|-------|-------------------|
| Sync | 0x05 | All |
| Responses | 0x06 | All |
| Add | 0x07 | All |
| Change | 0x08 | All |
| Delete | 0x09 | All |
| Fetch | 0x0A | All |
| SyncKey | 0x0B | All |
| ClientId | 0x0C | All |
| ServerId | 0x0D | All |
| Status | 0x0E | All |
| Collection | 0x0F | All |
| Class | 0x10 | All |
| CollectionId | 0x12 | All |

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

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 |
|-----------------------------|-------|-------------------|
| Anniversary | 0x05 | All |
| AssistantName | 0x06 | All |
| AssistantPhoneNumber | 0x07 | All |

| Tag name | Token | Protocol versions |
|---|-------|-------------------|
| Birthday | 0x08 | All |
| Body — see note 1 following this table | 0x09 | 2.5 |
| BodySize | 0x0A | 2.5 |
| BodyTruncated | 0x0B | 2.5 |
| Business2PhoneNumber | 0x0C | All |
| BusinessAddressCity | 0x0D | All |
| BusinessAddressCountry | 0x0E | All |
| BusinessAddressPostalCode | 0x0F | All |
| BusinessAddressState | 0x10 | All |
| BusinessAddressStreet | 0x11 | All |
| BusinessFaxNumber | 0x12 | All |
| BusinessPhoneNumber | 0x13 | All |
| CarPhoneNumber | 0x14 | All |
| Categories | 0x15 | All |
| Category | 0x16 | All |
| Children | 0x17 | All |
| Child | 0x18 | All |
| CompanyName | 0x19 | All |
| Department | 0x1A | All |
| Email1Address | 0x1B | All |
| Email2Address | 0x1C | All |
| Email3Address | 0x1D | All |
| FileAs | 0x1E | All |
| FirstName | 0x1F | All |
| Home2PhoneNumber | 0x20 | All |
| HomeAddressCity | 0x21 | All |
| HomeAddressCountry | 0x22 | All |
| HomeAddressPostalCode | 0x23 | All |
| HomeAddressState | 0x24 | All |
| HomeAddressStreet | 0x25 | All |

| Tag name | Token | Protocol versions |
|------------------------|-------|-------------------|
| HomeFaxNumber | 0x26 | All |
| HomePhoneNumber | 0x27 | All |
| JobTitle | 0x28 | All |
| LastName | 0x29 | All |
| MiddleName | 0x2A | All |
| MobilePhoneNumber | 0x2B | All |
| OfficeLocation | 0x2C | All |
| OtherAddressCity | 0x2D | All |
| OtherAddressCountry | 0x2E | All |
| OtherAddressPostalCode | 0x2F | All |
| OtherAddressState | 0x30 | All |
| OtherAddressStreet | 0x31 | All |
| PagerNumber | 0x32 | All |
| RadioPhoneNumber | 0x33 | All |
| Spouse | 0x34 | All |
| Suffix | 0x35 | All |
| Title | 0x36 | All |
| WebPage | 0x37 | All |
| YomiCompanyName | 0x38 | All |
| YomiFirstName | 0x39 | All |
| YomiLastName | 0x3A | All |
| Picture | 0x3C | All |
| Alias | 0x3D | 14.0, 14.1 |
| WeightedRank | 0x3E | 14.0, 14.1 |

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, and 14.1.

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 |
|--|-------|-------------------|
| Attachment | 0x05 | 2.5 |
| Attachments — see note 1 following this table | 0x06 | 2.5 |
| AttName | 0x07 | 2.5 |
| AttSize | 0x08 | 2.5 |
| Att0id | 0x09 | 2.5 |
| AttMethod | 0x0A | 2.5 |
| Body — see note 2 following this table | 0x0C | 2.5 |
| BodySize | 0x0D | 2.5 |
| BodyTruncated | 0x0E | 2.5 |
| DateReceived | 0x0F | All |
| DisplayName | 0x10 | 2.5 |
| DisplayTo | 0x11 | All |
| Importance | 0x12 | All |
| MessageClass | 0x13 | All |
| Subject | 0x14 | All |
| Read | 0x15 | All |
| To | 0x16 | All |
| Cc | 0x17 | All |
| From | 0x18 | All |
| ReplyTo | 0x19 | All |
| AllDayEvent | 0x1A | All |
| Categories | 0x1B | 14.0, 14.1 |
| Category | 0x1C | 14.0, 14.1 |
| DtStamp | 0x1D | All |
| EndTime | 0x1E | All |
| InstanceType | 0x1F | All |
| BusyStatus | 0x20 | All |
| Location | 0x21 | All |
| MeetingRequest | 0x22 | All |
| Organizer | 0x23 | All |

| Tag name | Token | Protocol versions |
|--------------------------------|-------|------------------------|
| RecurrenceId | 0x24 | All |
| Reminder | 0x25 | All |
| ResponseRequested | 0x26 | All |
| Recurrences | 0x27 | All |
| Recurrence | 0x28 | All |
| 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 | 0x34 | All |
| 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 |
| Status | 0x3B | 12.0, 12.1, 14.0, 14.1 |
| ContentClass | 0x3C | 12.0, 12.1, 14.0, 14.1 |
| FlagType | 0x3D | 12.0, 12.1, 14.0, 14.1 |
| CompleteTime | 0x3E | 12.0, 12.1, 14.0, 14.1 |
| DisallowNewTimeProposal | 0x3F | 14.0, 14.1 |

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, and 14.1.

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, and 14.1.

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 |
|---|-------|-------------------|
| Timezone | 0x05 | All |
| AllDayEvent | 0x06 | All |
| Attendees | 0x07 | All |
| Attendee | 0x08 | All |
| Email | 0x09 | All |
| Name | 0x0A | All |
| Body — see note 1 following this table | 0x0B | 2.5 |
| BodyTruncated | 0x0C | 2.5 |
| BusyStatus | 0x0D | All |
| Categories | 0x0E | All |
| Category | 0x0F | All |
| DtStamp | 0x11 | All |
| EndTime | 0x12 | All |
| Exception | 0x13 | All |
| Exceptions | 0x14 | All |
| Deleted | 0x15 | All |
| ExceptionStartTime | 0x16 | All |
| Location | 0x17 | All |
| MeetingStatus | 0x18 | All |
| OrganizerEmail | 0x19 | All |
| OrganizerName | 0x1A | All |
| Recurrence | 0x1B | All |

| Tag name | Token | Protocol versions |
|---------------------------|-------|------------------------|
| Type | 0x1C | All |
| Until | 0x1D | All |
| Occurrences | 0x1E | All |
| Interval | 0x1F | All |
| DayOfWeek | 0x20 | All |
| DayOfMonth | 0x21 | All |
| WeekOfMonth | 0x22 | All |
| MonthOfYear | 0x23 | All |
| Reminder | 0x24 | All |
| Sensitivity | 0x25 | All |
| Subject | 0x26 | All |
| StartTime | 0x27 | All |
| UID | 0x28 | All |
| AttendeeStatus | 0x29 | 12.0, 12.1, 14.0, 14.1 |
| AttendeeType | 0x2A | 12.0, 12.1, 14.0, 14.1 |
| DisallowNewTimeProposal | 0x33 | 14.0, 14.1 |
| ResponseRequested | 0x34 | 14.0, 14.1 |
| AppointmentReplyTime | 0x35 | 14.0, 14.1 |
| ResponseType | 0x36 | 14.0, 14.1 |
| CalendarType | 0x37 | 14.0, 14.1 |
| IsLeapMonth | 0x38 | 14.0, 14.1 |
| FirstDayOfWeek | 0x39 | 14.1 |
| OnlineMeetingConfLink | 0x3A | 14.1 |
| OnlineMeetingExternalLink | 0x3B | 14.1 |

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, and 14.1.

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 |
|------------------|-------|-------------------|
| MoveItems | 0x05 | All |
| Move | 0x06 | All |
| SrcMsgId | 0x07 | All |
| SrcFldId | 0x08 | All |
| DstFldId | 0x09 | All |
| Response | 0x0A | All |
| Status | 0x0B | All |
| DstMsgId | 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 |
|--|-------|-------------------|
| GetItemEstimate | 0x05 | All |
| Collections | 0x07 | All |
| Collection | 0x08 | All |
| Class — see note 1 following this table | 0x09 | 2.5, 12.0, 12.1 |
| CollectionId | 0x0A | All |
| Estimate | 0x0C | All |
| Response | 0x0D | All |
| Status | 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 and 14.1.

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 |
|----------------|-------|-------------------|
| Folders | 0x05 | 2.5, 12.0, 12.1 |

| Tag name | Token | Protocol versions |
|---------------------|-------|-------------------|
| Folder | 0x06 | 2.5, 12.0, 12.1 |
| DisplayName | 0x07 | All |
| ServerId | 0x08 | All |
| ParentId | 0x09 | All |
| Type | 0x0A | All |
| Status | 0x0C | All |
| Changes | 0x0E | All |
| Add | 0x0F | All |
| Delete | 0x10 | All |
| Update | 0x11 | All |
| SyncKey | 0x12 | All |
| FolderCreate | 0x13 | All |
| FolderDelete | 0x14 | All |
| FolderUpdate | 0x15 | All |
| FolderSync | 0x16 | All |
| Count | 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 |
|------------------------|-------|-------------------|
| CalendarId | 0x05 | All |
| CollectionId | 0x06 | All |
| MeetingResponse | 0x07 | All |
| RequestId | 0x08 | All |
| Request | 0x09 | All |
| Result | 0x0A | All |
| Status | 0x0B | All |
| UserResponse | 0x0C | All |

| Tag name | Token | Protocol versions |
|------------|-------|-------------------|
| InstanceId | 0x0E | 14.1 |

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 |
|---|-------|-------------------|
| Body — see note 1 following this table | 0x05 | 2.5 |
| BodySize | 0x06 | 2.5 |
| BodyTruncated | 0x07 | 2.5 |
| Categories | 0x08 | All |
| Category | 0x09 | All |
| Complete | 0x0A | All |
| DateCompleted | 0x0B | All |
| DueDate | 0x0C | All |
| UtcDueDate | 0x0D | All |
| Importance | 0x0E | All |
| Recurrence | 0x0F | All |
| Type | 0x10 | All |
| Start | 0x11 | All |
| Until | 0x12 | All |
| Occurrences | 0x13 | All |
| Interval | 0x14 | All |
| DayOfMonth | 0x15 | All |
| DayOfWeek | 0x16 | All |
| WeekOfMonth | 0x17 | All |
| MonthOfYear | 0x18 | All |
| Regenerate | 0x19 | All |
| DeadOccur | 0x1A | All |
| ReminderSet | 0x1B | All |

| Tag name | Token | Protocol versions |
|-----------------------|-------|------------------------|
| ReminderTime | 0x1C | All |
| Sensitivity | 0x1D | All |
| StartDate | 0x1E | All |
| UtcStartDate | 0x1F | All |
| Subject | 0x20 | All |
| OrdinalDate | 0x22 | 12.0, 12.1, 14.0, 14.1 |
| SubOrdinalDate | 0x23 | 12.0, 12.1, 14.0, 14.1 |
| CalendarType | 0x24 | 14.0, 14.1 |
| IsLeapMonth | 0x25 | 14.0, 14.1 |
| FirstDayOfWeek | 0x26 | 14.1 |

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, and 14.1.

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 |
|-----------------------------|-------|-------------------|
| ResolveRecipients | 0x05 | All |
| Response | 0x06 | All |
| Status | 0x07 | All |
| Type | 0x08 | All |
| Recipient | 0x09 | All |
| DisplayName | 0x0A | All |
| EmailAddress | 0x0B | All |
| Certificates | 0x0C | All |
| Certificate | 0x0D | All |
| MiniCertificate | 0x0E | All |
| Options | 0x0F | All |
| To | 0x10 | All |
| CertificateRetrieval | 0x11 | All |

| Tag name | Token | Protocol versions |
|-------------------------------|-------|-------------------|
| RecipientCount | 0x12 | All |
| MaxCertificates | 0x13 | All |
| MaxAmbiguousRecipients | 0x14 | All |
| CertificateCount | 0x15 | All |
| Availability | 0x16 | 14.0, 14.1 |
| StartTime | 0x17 | 14.0, 14.1 |
| EndTime | 0x18 | 14.0, 14.1 |
| MergedFreeBusy | 0x19 | 14.0, 14.1 |
| Picture | 0x1A | 14.1 |
| MaxSize | 0x1B | 14.1 |
| Data | 0x1C | 14.1 |
| MaxPictures | 0x1D | 14.1 |

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 |
|-------------------------|-------|-------------------|
| ValidateCert | 0x05 | All |
| Certificates | 0x06 | All |
| Certificate | 0x07 | All |
| CertificateChain | 0x08 | All |
| CheckCRL | 0x09 | All |
| Status | 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 |
|-------------------|-------|-------------------|
| CustomerId | 0x05 | All |

| Tag name | Token | Protocol versions |
|-------------------------|-------|-------------------|
| GovernmentId | 0x06 | All |
| IMAddress | 0x07 | All |
| IMAddress2 | 0x08 | All |
| IMAddress3 | 0x09 | All |
| ManagerName | 0x0A | All |
| CompanyMainPhone | 0x0B | All |
| AccountName | 0x0C | All |
| NickName | 0x0D | All |
| MMS | 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 |
|--------------------------|-------|-------------------|
| Ping | 0x05 | All |
| Status | 0x07 | All |
| HeartbeatInterval | 0x08 | All |
| Folders | 0x09 | All |
| Folder | 0x0A | All |
| Id | 0x0B | All |
| Class | 0x0C | All |
| MaxFolders | 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 |
|------------------|-------|-------------------|
| Provision | 0x05 | All |
| Policies | 0x06 | All |

| Tag name | Token | Protocol versions |
|--|-------|------------------------|
| Policy | 0x07 | All |
| PolicyType | 0x08 | All |
| PolicyKey | 0x09 | All |
| Data | 0x0A | All |
| Status | 0x0B | All |
| RemoteWipe | 0x0C | All |
| EASProvisionDoc | 0x0D | 12.0, 12.1, 14.0, 14.1 |
| DevicePasswordEnabled | 0x0E | 12.0, 12.1, 14.0, 14.1 |
| AlphanumericDevicePasswordRequired | 0x0F | 12.0, 12.1, 14.0, 14.1 |
| DeviceEncryptionEnabled — see note 1 following this table | 0x10 | 12.0, 12.1, 14.0, 14.1 |
| RequireStorageCardEncryption | 0x10 | 12.1, 14.0, 14.1 |
| PasswordRecoveryEnabled | 0x11 | 12.0, 12.1, 14.0, 14.1 |
| AttachmentsEnabled | 0x13 | 12.0, 12.1, 14.0, 14.1 |
| MinDevicePasswordLength | 0x14 | 12.0, 12.1, 14.0, 14.1 |
| MaxInactivityTimeDeviceLock | 0x15 | 12.0, 12.1, 14.0, 14.1 |
| MaxDevicePasswordFailedAttempts | 0x16 | 12.0, 12.1, 14.0, 14.1 |
| MaxAttachmentSize | 0x17 | 12.0, 12.1, 14.0, 14.1 |
| AllowSimpleDevicePassword | 0x18 | 12.0, 12.1, 14.0, 14.1 |
| DevicePasswordExpiration | 0x19 | 12.0, 12.1, 14.0, 14.1 |
| DevicePasswordHistory | 0x1A | 12.0, 12.1, 14.0, 14.1 |
| AllowStorageCard | 0x1B | 12.1, 14.0, 14.1 |
| AllowCamera | 0x1C | 12.1, 14.0, 14.1 |
| RequireDeviceEncryption | 0x1D | 12.1, 14.0, 14.1 |
| AllowUnsignedApplications | 0x1E | 12.1, 14.0, 14.1 |
| AllowUnsignedInstallationPackages | 0x1F | 12.1, 14.0, 14.1 |
| MinDevicePasswordComplexCharacters | 0x20 | 12.1, 14.0, 14.1 |
| AllowWiFi | 0x21 | 12.1, 14.0, 14.1 |
| AllowTextMessaging | 0x22 | 12.1, 14.0, 14.1 |
| AllowPOPIMAPEmail | 0x23 | 12.1, 14.0, 14.1 |
| AllowBluetooth | 0x24 | 12.1, 14.0, 14.1 |

| Tag name | Token | Protocol versions |
|---|-------|-------------------|
| AllowIrDA | 0x25 | 12.1, 14.0, 14.1 |
| RequireManualSyncWhenRoaming | 0x26 | 12.1, 14.0, 14.1 |
| AllowDesktopSync | 0x27 | 12.1, 14.0, 14.1 |
| MaxCalendarAgeFilter | 0x28 | 12.1, 14.0, 14.1 |
| AllowHTMLEmail | 0x29 | 12.1, 14.0, 14.1 |
| MaxEmailAgeFilter | 0x2A | 12.1, 14.0, 14.1 |
| MaxEmailBodyTruncationSize | 0x2B | 12.1, 14.0, 14.1 |
| MaxEmailHTMLBodyTruncationSize | 0x2C | 12.1, 14.0, 14.1 |
| RequireSignedSMIMEMessages | 0x2D | 12.1, 14.0, 14.1 |
| RequireEncryptedSMIMEMessages | 0x2E | 12.1, 14.0, 14.1 |
| RequireSignedSMIMEAlgorithm | 0x2F | 12.1, 14.0, 14.1 |
| RequireEncryptionSMIMEAlgorithm | 0x30 | 12.1, 14.0, 14.1 |
| AllowSMIMEEncryptionAlgorithmNegotiation | 0x31 | 12.1, 14.0, 14.1 |
| AllowSMIMESoftCerts | 0x32 | 12.1, 14.0, 14.1 |
| AllowBrowser | 0x33 | 12.1, 14.0, 14.1 |
| AllowConsumerEmail | 0x34 | 12.1, 14.0, 14.1 |
| AllowRemoteDesktop | 0x35 | 12.1, 14.0, 14.1 |
| AllowInternetSharing | 0x36 | 12.1, 14.0, 14.1 |
| UnapprovedInROMApplicationList | 0x37 | 12.1, 14.0, 14.1 |
| ApplicationName | 0x38 | 12.1, 14.0, 14.1 |
| ApprovedApplicationList | 0x39 | 12.1, 14.0, 14.1 |
| Hash | 0x3A | 12.1, 14.0, 14.1 |

Note 1: The **DeviceEncryptionEnabled** tag and the **RequireStorageCardEncryption** tag are equivalent.

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 |
|---------------|-------|-------------------|
| Search | 0x05 | All |

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

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 |
|---------------------|-------|-------------------|
| DisplayName | 0x05 | All |
| Phone | 0x06 | All |
| Office | 0x07 | All |
| Title | 0x08 | All |
| Company | 0x09 | All |
| Alias | 0x0A | All |
| FirstName | 0x0B | All |
| LastName | 0x0C | All |
| HomePhone | 0x0D | All |
| MobilePhone | 0x0E | All |
| EmailAddress | 0x0F | All |
| Picture | 0x10 | 14.1 |
| Status | 0x11 | 14.1 |
| Data | 0x12 | 14.1 |

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 |
|--------------------------|-------|------------------------|
| BodyPreference | 0x05 | 12.0, 12.1, 14.0, 14.1 |
| Type | 0x06 | 12.0, 12.1, 14.0, 14.1 |
| TruncationSize | 0x07 | 12.0, 12.1, 14.0, 14.1 |
| AllOrNone | 0x08 | 12.0, 12.1, 14.0, 14.1 |
| Body | 0x0A | 12.0, 12.1, 14.0, 14.1 |
| Data | 0x0B | 12.0, 12.1, 14.0, 14.1 |
| EstimatedDataSize | 0x0C | 12.0, 12.1, 14.0, 14.1 |
| Truncated | 0x0D | 12.0, 12.1, 14.0, 14.1 |
| Attachments | 0x0E | 12.0, 12.1, 14.0, 14.1 |
| Attachment | 0x0F | 12.0, 12.1, 14.0, 14.1 |

| Tag name | Token | Protocol versions |
|---------------------------|-------|------------------------|
| DisplayName | 0x10 | 12.0, 12.1, 14.0, 14.1 |
| FileReference | 0x11 | 12.0, 12.1, 14.0, 14.1 |
| Method | 0x12 | 12.0, 12.1, 14.0, 14.1 |
| ContentId | 0x13 | 12.0, 12.1, 14.0, 14.1 |
| ContentLocation | 0x14 | 12.0, 12.1, 14.0, 14.1 |
| IsInline | 0x15 | 12.0, 12.1, 14.0, 14.1 |
| NativeBodyType | 0x16 | 12.0, 12.1, 14.0, 14.1 |
| ContentType | 0x17 | 12.0, 12.1, 14.0, 14.1 |
| Preview | 0x18 | 14.0, 14.1 |
| BodyPartPreference | 0x19 | 14.1 |
| BodyPart | 0x1A | 14.1 |
| Status | 0x1B | 14.1 |

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

| Tag name | Token | Protocol versions |
|---------------------------------|-------|------------------------|
| Settings | 0x05 | 12.0, 12.1, 14.0, 14.1 |
| Status | 0x06 | 12.0, 12.1, 14.0, 14.1 |
| Get | 0x07 | 12.0, 12.1, 14.0, 14.1 |
| Set | 0x08 | 12.0, 12.1, 14.0, 14.1 |
| Oof | 0x09 | 12.0, 12.1, 14.0, 14.1 |
| OofState | 0x0A | 12.0, 12.1, 14.0, 14.1 |
| StartTime | 0x0B | 12.0, 12.1, 14.0, 14.1 |
| EndTime | 0x0C | 12.0, 12.1, 14.0, 14.1 |
| OofMessage | 0x0D | 12.0, 12.1, 14.0, 14.1 |
| AppliesToInternal | 0x0E | 12.0, 12.1, 14.0, 14.1 |
| AppliesToExternalKnown | 0x0F | 12.0, 12.1, 14.0, 14.1 |
| AppliesToExternalUnknown | 0x10 | 12.0, 12.1, 14.0, 14.1 |

| Tag name | Token | Protocol versions |
|------------------------------------|-------|------------------------|
| Enabled | 0x11 | 12.0, 12.1, 14.0, 14.1 |
| ReplyMessage | 0x12 | 12.0, 12.1, 14.0, 14.1 |
| BodyType | 0x13 | 12.0, 12.1, 14.0, 14.1 |
| DevicePassword | 0x14 | 12.0, 12.1, 14.0, 14.1 |
| Password | 0x15 | 12.0, 12.1, 14.0, 14.1 |
| DeviceInformation | 0x16 | 12.0, 12.1, 14.0, 14.1 |
| Model | 0x17 | 12.0, 12.1, 14.0, 14.1 |
| IMEI | 0x18 | 12.0, 12.1, 14.0, 14.1 |
| FriendlyName | 0x19 | 12.0, 12.1, 14.0, 14.1 |
| OS | 0x1A | 12.0, 12.1, 14.0, 14.1 |
| OSLanguage | 0x1B | 12.0, 12.1, 14.0, 14.1 |
| PhoneNumber | 0x1C | 12.0, 12.1, 14.0, 14.1 |
| UserInformation | 0x1D | 12.0, 12.1, 14.0, 14.1 |
| EmailAddresses | 0x1E | 12.0, 12.1, 14.0, 14.1 |
| SMTPAddress | 0x1F | 12.0, 12.1, 14.0, 14.1 |
| UserAgent | 0x20 | 12.1, 14.0, 14.1 |
| EnableOutboundSMS | 0x21 | 14.0, 14.1 |
| MobileOperator | 0x22 | 14.0, 14.1 |
| PrimarySmtppAddress | 0x23 | 14.1 |
| Accounts | 0x24 | 14.1 |
| Account | 0x25 | 14.1 |
| AccountId | 0x26 | 14.1 |
| AccountName | 0x27 | 14.1 |
| UserDisplayName | 0x28 | 14.1 |
| SendDisabled | 0x29 | 14.1 |
| RightsManagementInformation | 0x2B | 14.1 |

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 |
|-------------------------|-------|------------------------|
| LinkId | 0x05 | 12.0, 12.1, 14.0, 14.1 |
| DisplayName | 0x06 | 12.0, 12.1, 14.0, 14.1 |
| IsFolder | 0x07 | 12.0, 12.1, 14.0, 14.1 |
| CreationDate | 0x08 | 12.0, 12.1, 14.0, 14.1 |
| LastModifiedDate | 0x09 | 12.0, 12.1, 14.0, 14.1 |
| IsHidden | 0x0A | 12.0, 12.1, 14.0, 14.1 |
| ContentLength | 0x0B | 12.0, 12.1, 14.0, 14.1 |
| ContentType | 0x0C | 12.0, 12.1, 14.0, 14.1 |

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 |
|----------------------------|-------|------------------------|
| ItemOperations | 0x05 | 12.0, 12.1, 14.0, 14.1 |
| Fetch | 0x06 | 12.0, 12.1, 14.0, 14.1 |
| Store | 0x07 | 12.0, 12.1, 14.0, 14.1 |
| Options | 0x08 | 12.0, 12.1, 14.0, 14.1 |
| Range | 0x09 | 12.0, 12.1, 14.0, 14.1 |
| Total | 0x0A | 12.0, 12.1, 14.0, 14.1 |
| Properties | 0x0B | 12.0, 12.1, 14.0, 14.1 |
| Data | 0x0C | 12.0, 12.1, 14.0, 14.1 |
| Status | 0x0D | 12.0, 12.1, 14.0, 14.1 |
| Response | 0x0E | 12.0, 12.1, 14.0, 14.1 |
| Version | 0x0F | 12.0, 12.1, 14.0, 14.1 |
| Schema | 0x10 | 12.0, 12.1, 14.0, 14.1 |
| Part | 0x11 | 12.0, 12.1, 14.0, 14.1 |
| EmptyFolderContents | 0x12 | 12.0, 12.1, 14.0, 14.1 |
| DeleteSubFolders | 0x13 | 12.0, 12.1, 14.0, 14.1 |
| UserName | 0x14 | 12.1, 14.0, 14.1 |

| Tag name | Token | Protocol versions |
|-----------------------|-------|-------------------|
| Password | 0x15 | 12.1, 14.0, 14.1 |
| Move | 0x16 | 14.0, 14.1 |
| DstFldId | 0x17 | 14.0, 14.1 |
| ConversationId | 0x18 | 14.0, 14.1 |
| MoveAlways | 0x19 | 14.0, 14.1 |

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 |
|------------------------|-------|-------------------|
| SendMail | 0x05 | 14.0, 14.1 |
| SmartForward | 0x06 | 14.0, 14.1 |
| SmartReply | 0x07 | 14.0, 14.1 |
| SaveInSentItems | 0x08 | 14.0, 14.1 |
| ReplaceMime | 0x09 | 14.0, 14.1 |
| Source | 0x0B | 14.0, 14.1 |
| FolderId | 0x0C | 14.0, 14.1 |
| ItemId | 0x0D | 14.0, 14.1 |
| LongId | 0x0E | 14.0, 14.1 |
| InstanceId | 0x0F | 14.0, 14.1 |
| Mime | 0x10 | 14.0, 14.1 |
| ClientId | 0x11 | 14.0, 14.1 |
| Status | 0x12 | 14.0, 14.1 |
| AccountId | 0x13 | 14.1 |

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 |
|------------------------------|-------|-------------------|
| UmCallerID | 0x05 | 14.0, 14.1 |
| UmUserNotes | 0x06 | 14.0, 14.1 |
| UmAttDuration | 0x07 | 14.0, 14.1 |
| UmAttOrder | 0x08 | 14.0, 14.1 |
| ConversationId | 0x09 | 14.0, 14.1 |
| ConversationIndex | 0x0A | 14.0, 14.1 |
| LastVerbExecuted | 0x0B | 14.0, 14.1 |
| LastVerbExecutionTime | 0x0C | 14.0, 14.1 |
| ReceivedAsBcc | 0x0D | 14.0, 14.1 |
| Sender | 0x0E | 14.0, 14.1 |
| CalendarType | 0x0F | 14.0, 14.1 |
| IsLeapMonth | 0x10 | 14.0, 14.1 |
| AccountId | 0x11 | 14.1 |
| FirstDayOfWeek | 0x12 | 14.1 |
| MeetingMessageType | 0x13 | 14.1 |

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 |
|-------------------------|-------|-------------------|
| Subject | 0x05 | 14.0, 14.1 |
| MessageClass | 0x06 | 14.0, 14.1 |
| LastModifiedDate | 0x07 | 14.0, 14.1 |
| Categories | 0x08 | 14.0, 14.1 |
| Category | 0x09 | 14.0, 14.1 |

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 |
|---|-------|-------------------|
| RightsManagementSupport | 0x05 | 14.1 |
| RightsManagementTemplates | 0x06 | 14.1 |
| RightsManagementTemplate | 0x07 | 14.1 |
| RightsManagementLicense | 0x08 | 14.1 |
| EditAllowed | 0x09 | 14.1 |
| ReplyAllowed | 0x0A | 14.1 |
| ReplyAllAllowed | 0x0B | 14.1 |
| ForwardAllowed | 0x0C | 14.1 |
| ModifyRecipientsAllowed | 0x0D | 14.1 |
| ExtractAllowed | 0x0E | 14.1 |
| PrintAllowed | 0x0F | 14.1 |
| ExportAllowed | 0x10 | 14.1 |
| ProgrammaticAccessAllowed | 0x11 | 14.1 |
| Owner | 0x12 | 14.1 |
| ContentExpiryDate | 0x13 | 14.1 |
| TemplateID | 0x14 | 14.1 |
| TemplateName | 0x15 | 14.1 |
| TemplateDescription | 0x16 | 14.1 |
| ContentOwner | 0x17 | 14.1 |
| RemoveRightsManagementProtection | 0x18 | 14.1 |

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 (3)** 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) |

| Bytes | Description |
|----------------------------|--|
| 5C | <airsync:Collections>, with content |
| 4F | <airsync:Collection>, with content |
| 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 WBXML code page 17 (AirSyncBase) |
| 4A | <airsyncbase:Body>, with content |
| 46 | <airsyncbase:Type>, with content |
| 03 | Inline string follows |
| 31 00 | "1" |

| Bytes | Description |
|-------------------------------|---|
| 01 | </airsynibase:Type> |
| 4C | <airsynibase:EstimatedDataSize>, with content |
| 03 | Inline string follows |
| 30 00 | "0" |
| 01 | </airsynibase:EstimatedDataSize> |
| 4D | <airsynibase:Truncated>, with content |
| 03 | Inline string follows |
| 31 00 | "1" |
| 01 | </airsynibase:Truncated> |
| 01 | </airsynibase: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 | <airsynibase:NativeBodyType>, with content |
| 03 | Inline string follows |
| 31 00 | "1" |
| 01 | </airsynibase:NativeBodyType> |
| 01 | </airsync:ApplicationData> |
| 01 | </airsync:Add> |

| Bytes | Description |
|-------|------------------------|
| 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
- Windows 8.1
- Windows Communication Apps

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

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

6 Change Tracking

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

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