[MS-ASNOTE]:
ActiveSync Notes Class Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
04/10/2009	0.1.0	Major	Initial Availability.
07/15/2009	1.0.0	Major	Revised and edited for technical content.
11/04/2009	2.0.0	Major	Updated and revised the technical content.
02/10/2010	3.0.0	Major	Updated and revised the technical content.
05/05/2010	4.0.0	Major	Updated and revised the technical content.
08/04/2010	5.0	Major	Significantly changed the technical content.
11/03/2010	5.1	Minor	Clarified the meaning of the technical content.
03/18/2011	5.2	Minor	Clarified the meaning of the technical content.
08/05/2011	6.0	Major	Significantly changed the technical content.
10/07/2011	6.1	Minor	Clarified the meaning of the technical content.
01/20/2012	7.0	Major	Significantly changed the technical content.

Table of Contents

1 Introduction

The ActiveSync Notes Class Protocol enables the communication of notes data between a mobile device and the server in the ActiveSync Protocol.

Sections 1.8, 2, and 3 of this specification are normative and contain RFC 2119 language. Sections 1.5 and 1.9 are also normative but cannot contain RFC 2119 language. All other sections and examples in this specification are informative.

1.1 Glossary

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

XML

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

Hypertext Markup Language (HTML)
Inter-Personal Mail (IPM)
plain text
Rich Text Format (RTF)
Wireless Application Protocol (WAP) Binary XML (WBXML)
XML element
XML namespace
XML schema
XML schema definition (XSD)

The following terms are specific to this document:

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

1.2 References

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. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

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

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

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

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

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

[XML] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Fourth Edition)", W3C Recommendation, August 2006, http://www.w3.org/TR/2006/REC-xml-20060816/

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, http://www.w3.org/TR/2009/REC-xml-names-20091208/

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

1.2.2 Informative References

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

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

1.3 Overview

This protocol describes the **XML** representation of notes that are used for client and server communication as described in [MS-ASCMD]. The notes data is included in protocol command requests when notes data is sent from the client to the server, and is included in protocol command responses when notes data is returned from the server to the client.

1.4 Relationship to Other Protocols

This protocol describes the XML representation of notes that is used by the command requests and command responses that are described in [MS-ASCMD]. The protocol governing the transmission of these commands between the client and the server is described in [MS-ASCMD]. The **Wireless Application Protocol (WAP) Binary XML (WBXML)**, as described in [MS-ASWBXML], is used to transmit the XML markup that constitutes the request body and the response body.

All simple data types in this document conform to the data type definitions that are described in [MS-ASDTYPE].

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

This protocol describes a set of **XML elements** that are used to communicate notes data when using the commands that are described in [MS-ASCMD]. This set of elements is applicable when communicating notes information between a mobile device and a server. Except where indicated, these elements are not applicable when communicating other types of information that are supported by the ActiveSync protocol.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

This protocol consists of a series of XML elements that are embedded inside of a command request or command response, as specified in [MS-ASCMD].

The XML markup that constitutes the request body or the response body that is transmitted between the client and the server uses Wireless Application Protocol (WAP) Binary XML (WBXML), as specified in [MS-ASWBXML].

2.2 Message Syntax

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

This protocol defines **XML schema** elements for the **Notes** class, which represents a note.

The **XML schema definition (XSD)** for the **Notes** class is defined as follows, in accordance with the rules specified in [XMLSCHEMA1]. The following elements represent the full set of **Notes** class data that can be returned in a **Sync** command response ([MS-ASCMD] section 2.2.2.19.2).

```
<?xml version="1.0" ?><xs:schema xmlns:tns="Notes:" attributeFormDefault="unqualified"
elementFormDefault="qualified"
targetNamespace="Notes:" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:A="AirSyncBase:">
     <xs:import namespace="AirSyncBase:" schemaLocation="AirSyncBase.xsd"/>
     <xs:element name="Subject" type="xs:string" />
     <xs:element name="MessageClass" type="xs:string" />
     <xs:element name="LastModifiedDate" type="xs:dateTime" />
     <xs:element name="Categories">
          <xs:complexType>
               <xs:sequence minOccurs="0">
                    <xs:element maxOccurs="300" name="Category" type="xs:string" />
               </xs:sequence>
          </xs:complexType>
     </xs:element>
</xs:schema>
```

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

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

2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [XMLNS]. Although this specification associates a specific XML namespace prefix for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and is not significant for interoperability.

Prefix	Namespace URI	Reference
airsyncbase	**AirSyncBase**	[MS-ASAIRS]
(none)	**Notes**	
airsync	**AirSync**	[MS-ASCMD] section 2.2.2.19
itemoperations	**ItemOperations**	[MS-ASCMD] section 2.2.2.8
search	**Search**	[MS-ASCMD] section 2.2.2.14
xs	**http://www.w3.org/2001/XMLSchema**	[XMLSCHEMA1]

2.2.2 Elements

Elements of the **Notes** class are defined in two namespaces: **Notes** and **AirSyncBase**. All **Notes** class elements are specified in this document; elements defined in the **AirSyncBase** namespace are further specified in [MS-ASAIRS].

Except where otherwise specified in the following sections, each element of the **Notes** class is used in ActiveSync command requests and responses as follows:

- As an optional child element of the **itemoperations:Schema** element ([MS-ASCMD] section 2.2.3.145) in **ItemOperations** command requests ([MS-ASCMD] section 2.2.2.8.2)
- As an optional child element of the **itemoperations:Properties** element ([MS-ASCMD] section 2.2.3.128.1) in **ItemOperations** command responses ([MS-ASCMD] section 2.2.2.8.3)
- As an optional child element of the **search:Properties** element ([MS-ASCMD] section 2.2.3.128.2) in **Search** command responses ([MS-ASCMD] section 2.2.2.14.2)
- As an optional child element of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) in **Sync** command requests ([MS-ASCMD] section 2.2.2.19.1)
- As an optional child element of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) in **Sync** command responses ([MS-ASCMD] section 2.2.2.19.2)

The following table summarizes the set of common XML schema element definitions defined by this specification. XML schema element definitions that are specific to one or more particular operations are specified further in sections 3.1.5.1, 3.1.5.2, 3.1.5.3, 3.2.5.1, 3.2.5.2, and 3.2.5.3.

Element name	Description
airsyncbase:Body (section 2.2.2.1)	The text of the note.
Subject (section 2.2.2.6)	The subject of the note.
MessageClass (section 2.2.2.5)	The form of the message.
LastModifiedDate (section 2.2.2.4)	The day and time that the note was last changed by the user.
Categories (section 2.2.2.2)	A collection of labels assigned to the note.
Category (section 2.2.2.3)	One of the user-assigned labels applied to the note.

2.2.2.1 Body

The **airsyncbase:Body** element is a **container** ([MS-ASDTYPE] section 2.2) element that specifies the text of the note. It is defined as an element in the **AirSyncBase** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The **airsyncbase:Type** element ([MS-ASAIRS] section 2.2.2.22.1) (a required child element of the **airsyncbase:Body** element) MUST be set to one of the following values.

Value	Meaning
1	**Plain text**
2	**HTML**
3	**Rich Text Format (RTF)**

When the **airsyncbase:Body** element is used in a **Sync** command request ([MS-ASCMD] section 2.2.2.19.1) or response ([MS-ASCMD] section 2.2.2.19.2), the **airsyncbase:Data** element ([MS-ASAIRS] section 2.2.2.10.1) is a required child element of the **airsyncbase:Body** element.

For more details about the **airsyncbase:Body** element, see [MS-ASAIRS] section 2.2.2.4.

2.2.2.2 Categories

The **Categories** element is a **container** ([MS-ASDTYPE] section 2.2) element that specifies a collection of labels assigned to the note. It is defined as an element in the **Notes** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The **Categories** element has the following child element:

- **Category** (section 2.2.2.3): Zero or more instances of this element are allowed.

2.2.2.3 Category

The **Category** element is an optional child element of the **Categories** element (section 2.2.2.2) that specifies a user-selected label that has been applied to the note. It is defined as an element in the **Notes** namespace.

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

2.2.2.4 LastModifiedDate

The **LastModifiedDate** element specifies when the note was last changed. It is defined as an element in the **Notes** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

The value of the **LastModifiedDate** element is a **dateTime** data type, as specified in [MS-ASDTYPE] section 2.3.

2.2.2.5 MessageClass

The **MessageClass** element is a required element that specifies the **Inter-Personal Mail (IPM)** type of the note. It is defined as an element in the **Notes** namespace.

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

The value of the **MessageClass** element MUST be either "IPM.StickyNote" or "IPM.StickyNote.*", where "*" represents an arbitrary string chosen by the client or server.

2.2.2.6 Subject

The **Subject** element specifies the subject of the note. It is defined as an element in the **Notes** namespace and is used in ActiveSync command requests and responses as specified in section 2.2.2.

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

3 Protocol Details

3.1 Client Details

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

Notes class: A structured XML text block that adheres to the XML schema definition specified in section 2.2. It is returned by the server to the client as part of a full XML response to the client command requests that are specified in section 3.1.5. It is included in command requests that are sent from the client to the server to retrieve or synchronize notes.

Command request: A WBXML-formatted message that adheres to the command schemas specified in [MS-ASCMD].

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Synchronizing Notes Data Between Client and Server

A client initiates synchronization of **Notes** class data with the server by sending a **Sync** command request ([MS-ASCMD] section 2.2.2.19.1) to the server.

3.1.4.2 Searching a Server for Notes

A client searches for **Notes** class data by sending a **Search** command request ([MS-ASCMD] section 2.2.2.14.1) to the server.

3.1.4.3 Requesting Details for One or More Notes

A client requests **Notes** class data for one or more individual notes by sending an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8.2) to the server that contains one or more **itemoperations:Fetch** elements ([MS-ASCMD] section 2.2.3.63.1).

3.1.5 Message Processing Events and Sequencing Rules

3.1.5.1 ItemOperations Command Request

A client uses an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8.2) to retrieve data from the server for one or more specific **Notes** class items.

Notes class elements cannot be included in an **ItemOperations** command request.

For more details about the **ItemOperations** command, see [MS-ASCMD] section 2.2.2.8.

3.1.5.1.1 airsyncbase:Body Element

If a client cannot display the data type specified by the **airsyncbase:Type** element (a required child element of the **airsyncbase:Body** element (section 2.2.2.1) in the **ItemOperations** command response ([MS-ASCMD] section 2.2.2.8.3)), as specified in [MS-ASAIRS] section 2.2.2.22.1), the client can ignore the **airsyncbase:Body** element.

3.1.5.2 Search Command Request

A client uses the **Search** command request ([MS-ASCMD] section 2.2.2.14.1) to retrieve **Notes** class items that match the criteria specified by the client.

Elements that belong to the **Notes** class, as specified in section 2.2.2, MUST NOT be included in a **Search** command request.

For more details about the **Search** command, see [MS-ASCMD] section 2.2.2.14.

3.1.5.3 Sync Command Request

A client uses the **Sync** command request ([MS-ASCMD] section 2.2.2.19.1) to synchronize its **Notes** class items for a specified user with the notes currently stored by the server.

Any of the elements that belong to the **Notes** class, as specified in section 2.2.2, can be included in a **Sync** command request as child elements of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) within either an **airsync:Add** element ([MS-ASCMD] section 2.2.3.7.2) or an **airsync:Change** element ([MS-ASCMD] section 2.2.3.24).

The **airsync:Supported** element ([MS-ASCMD] section 2.2.3.164) MUST NOT be included in a **Sync** command request for the **Notes** class.

When an existing note is updated with an **airsync:Change** element in a **Sync** command, the command will contain all required elements of the note.

For more details about the **Sync** command, see [MS-ASCMD] section 2.2.2.19.

3.1.5.3.1 LastModifiedDate Element

The client can omit the **LastModifiedDate** element (section 2.2.2.4) from the **Sync** command request ([MS-ASCMD] section 2.2.2.19.1). If it is included in a **Sync** command request, the server will ignore it.

3.1.5.3.2 MessageClass Element

If a client changes the **MessageClass** element (section 2.2.2.5) value on an existing note, the **MessageClass** element value MUST conform to the requirements specified in section 2.2.2.5.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

3.2.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

Notes class: A structured XML text block that adheres to the XML schema specified in section 2.2. It is returned by the server as part of a full XML response to the client requests specified in section 3.1.5.

The server can return zero or more **Notes** class XML blocks in its response, depending on how many notes match the criteria specified by the client command request. The server returns a **Notes** class XML block for every note that matches the criteria specified by the client command request.

Command response: A WBXML-formatted message that adheres to the command schemas specified in [MS-ASCMD].

3.2.2 Timers

None

3.2.3 Initialization

None.

3.2.4 Higher-Layer Triggered Events

3.2.4.1 Synchronizing Notes Data Between Client and Server

Synchronization of **Notes** class data between client and server is initiated by the client, as specified in section 3.1.4.1. The server responds with a **Sync** command response ([MS-ASCMD] section 2.2.2.19.2).

3.2.4.2 Searching for Notes Data

Searching for **Notes** class data is initiated by the client, as specified in section 3.1.4.2. The server responds with a **Search** command response ([MS-ASCMD] section 2.2.2.14.2).

3.2.4.3 Retrieving Details for One or More Notes

Retrieval of **Notes** class data for one or more individual notes is initiated by the client, as specified in section 3.1.4.3. The server responds with an **ItemOperations** command response ([MS-ASCMD] section 2.2.2.8.3).

3.2.5 Message Processing Events and Sequencing Rules

3.2.5.1 ItemOperations Command Response

When a client uses an **ItemOperations** command request ([MS-ASCMD] section 2.2.2.8.2) to retrieve data from the server for one or more notes items, as specified in section 3.1.5.1, the server responds with an **ItemOperations** command response ([MS-ASCMD] section 2.2.2.8.3).

Any of the elements that belong to the **Notes** class, as specified in section 2.2.2, can be included in an **ItemOperations** command response. If an **itemoperations:Schema** element ([MS-ASCMD] section 2.2.3.145) is included in the **ItemOperations** command request, then the elements returned in the **ItemOperations** command response MUST be restricted to the elements that were included as child elements of the **ItemOperations:Schema** element in the command request.

Notes class elements are returned as child elements of the **itemoperations:Properties** element ([MS-ASCMD] section 2.2.3.128) in the **ItemOperations** command response.

For more details about the **ItemOperations** command, see [MS-ASCMD] section 2.2.2.8.

3.2.5.2 Search Command Response

When a client uses the **Search** command request ([MS-ASCMD] section 2.2.2.14.1) to retrieve **Notes** class items that match the criteria specified by the client, as specified in section 3.1.5.2, the server responds with a **Search** command response ([MS-ASCMD] section 2.2.2.14.2).

Any of the elements that belong to the **Notes** class, as specified in section 2.2.2, can be included in a **Search** command response.

Notes class elements are returned as child elements of the **search:Properties** element ([MS-ASCMD] section 2.2.3.128) in the **Search** command response.

For more details about the **Search** command, see [MS-ASCMD] section 2.2.2.14.

3.2.5.3 Sync Command Response

When a client uses the **Sync** command request ([MS-ASCMD] section 2.2.2.19.1) to synchronize its **Notes** class items for a specified user with the notes currently stored by the server, as specified in section 3.1.5.3, the server responds with a **Sync** command response ([MS-ASCMD] section 2.2.2.19.2).

Any of the elements for the **Notes** class, as specified in section 2.2.2, can be included in a **Sync** command response as child elements of the **airsync:ApplicationData** element ([MS-ASCMD] section 2.2.3.11) within either an **airsync:Add** element ([MS-ASCMD] section 2.2.3.7.2) or an **airsync:Change** element ([MS-ASCMD] section 2.2.3.24).

When an existing note is updated by using an **airsync:Change** element in a **Sync** command request, the command request will contain all required elements of the note. If any element that was previously set is missing, the server will delete that property from the note. The only exception is the **airsyncbase:Body** element (section 2.2.2.1), whose absence within an **airsync:Change** element is not to be interpreted as an implicit delete.

If the **airsync:Supported** element ([MS-ASCMD] section 2.2.3.164) is included in a **Sync** command request for **Notes** class data, the server will return a status error 4 (protocol error).

For more details about the **Sync** command, see [MS-ASCMD] section 2.2.2.19.

3.2.5.3.1 LastModifiedDate Element

The **LastModifiedDate** element (section 2.2.2.4) is not required in the **Sync** command request ([MS-ASCMD] section 2.2.2.19.1), but it is required in the **Sync** command response ([MS-ASCMD] section 2.2.2.19.2).

If a **Sync** command request includes the **LastModifiedDate** element, the server ignores the element and returns the actual time that the note was last modified.

3.2.5.3.2 MessageClass Element

If a client submits a **Sync** command request ([MS-ASCMD] section 2.2.2.19.1) that contains a **MessageClass** element value that does not conform to the requirements specified in section 2.2.2.5, the server MUST respond with a status error of 6.

3.2.6 Timer Events

None.

3.2.7 Other Local Events

None.

4 Protocol Examples

The following example demonstrates a client request to synchronize notes data with the server, and the server response. In this example, the client uses the **Sync** command request ([MS-ASCMD] section 2.2.2.19.1) to create one note, update one note, and delete one note.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync
xmlns:airsyncbase="AirSyncBase:"
xmlns:notes="Notes:" xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>398434774</SyncKey>
      <CollectionId>8</CollectionId>
      <DeletesAsMoves>1</DeletesAsMoves>
      <GetChanges>1</GetChanges>
      <WindowSize>512</WindowSize>
      <Options>
        <airsyncbase:BodyPreference>
          <airsyncbase:Type>2</airsyncbase:Type>
          <airsyncbase:TruncationSize>5120</airsyncbase:TruncationSize>
          <airsyncbase:AllOrNone>1</airsyncbase:AllOrNone>
        </airsyncbase:BodyPreference>
      </Options>
      <Commands>
        <Add>
          <ClientId>c212ac10-0465-4983-a898-076e152552ef</ClientId>
          <ApplicationData>
            <airsyncbase:Body>
              <airsyncbase:Type>2</airsyncbase:Type>
              <airsyncbase:Data>A new note I just created.</airsyncbase:Data>
            </airsyncbase:Body>
            <notes:Categories>
              <notes:Category>Business</notes:Category>
            </notes:Categories>
            <notes:Subject>New note</notes:Subject>
            <notes:MessageClass>IPM.StickyNote</notes:MessageClass>
          </ApplicationData>
        </Add>
        <Delete>
          <ServerId>8:1</ServerId>
        </Delete>
        <Change>
          <ServerId>bb18e2a7-3e65-41a1-b0b2-9815539f98ad</ServerId>
          <ApplicationData>
            <airsyncbase:Body>
              <airsyncbase:Type>2</airsyncbase:Type>
              <airsyncbase:Data>&lt;strong&gt;This is my second
note.&lt;/strong&gt;</airsyncbase:Data>
            </airsyncbase:Body>
            <notes:Categories>
              <notes:Category>Business</notes:Category>
            </notes:Categories>
            <notes:Subject>Second Note</notes:Subject>
            <notes:MessageClass>IPM.StickyNote</notes:MessageClass>
          </ApplicationData>
```

```
        </Change>
      </Commands>
    </Collection>
  </Collections>
</Sync>
```

Response:

```
<?xml version="1.0" encoding="utf-8"?>
<Sync xmlns="AirSync:">
  <Collections>
    <Collection>
      <SyncKey>1960353427</SyncKey>
      <CollectionId>8</CollectionId>
      <Status>1</Status>
      <Responses>
        <Add>
          <ClientId>c212ac10-0465-4983-a898-076e152552ef</ClientId>
          <ServerId>8:3</ServerId>
          <Status>1</Status>
        </Add>
        <Change>
          <ServerId>bb18e2a7-3e65-41a1-b0b2-9815539f98ad</ServerId>
          <Status>8</Status>
        </Change>
      </Responses>
    </Collection>
  </Collections>
</Sync>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

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

- Microsoft® Exchange Server 2010
- Microsoft® Exchange Server 15 Technical Preview

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.

7 Change Tracking

This section identifies changes that were made to the [MS-ASNOTE] protocol document between the October 2011 and January 2012 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

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

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

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

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

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

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

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

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

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

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

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

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

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

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
6 Appendix A: Product Behavior	Added Exchange 15 Technical Preview to the list of applicable product versions.	Y	Content updated.

8 Index