

# [MS-ASDOC]: ActiveSync Document Class Protocol Specification

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## Revision Summary

Date	Revision History	Revision Class	Comments
12/03/2008	1.0.0	Major	Initial Release.
02/04/2009	1.0.1	Editorial	Revised and edited technical content.
03/04/2009	1.0.2	Editorial	Revised and edited technical content.
04/10/2009	2.0.0	Major	Updated 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	7.1	Minor	Clarified the meaning of the technical content.
03/18/2011	7.2	Minor	Clarified the meaning of the technical content.
08/05/2011	8.0	Major	Significantly changed the technical content.

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# 1 Introduction

The ActiveSync Document Class Protocol supports accessing documents stored in Windows® SharePoint® Services and on file shares specified using **Universal Naming Convention (UNC)** paths. This protocol enables the communication of document 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 [\[MS-GLOS\]](#):

**Coordinated Universal Time (UTC)**  
**Universal Naming Convention (UNC)**  
**XML**

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

**base64 encoding**  
**header**  
**Multipurpose Internet Mail Extensions (MIME)**  
**Uniform Resource Identifier (URI)**  
**Wireless Application Protocol (WAP) Binary XML (WBXML)**  
**XML namespace**  
**XML schema**

The following terms are specific to this document:

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

## 1.2 References

### 1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact [dochelp@microsoft.com](mailto: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 \(WBXML\) Protocol Specification](#)".

[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 documents that is used for client and server communication as described in [\[MS-ASCMD\]](#). The document data is included in protocol command requests when document data is being sent from the client to the server, and is included in protocol command responses when document data is returned from the server to the client.

## 1.4 Relationship to Other Protocols

This protocol describes the XML representation of documents that is used by the command requests and 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 elements that is used to communicate document data when using the commands described in [\[MS-ASCMD\]](#). This set of elements is applicable when communicating document data such as the document's name, location, estimated size, and visibility between a mobile device and a server. These elements are not applicable when sending calendar, e-mail, note, contact, or task data between a mobile device and a server.

## 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 **Document** class, which represents a document. The XML schema definition for the **Document** class is as follows, in accordance with the rules specified in [\[XMLSCHEMA1\]](#).

```
<?xml version="1.0" ?><xs:schema xmlns:tns="DocumentLibrary:"
attributeFormDefault="unqualified" elementFormDefault="qualified"
targetNamespace="DocumentLibrary:" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:airsynibase="AirSyncBase:">
  <xs:import namespace="AirSyncBase" />
  <xs:element name="LinkId" type="xs:string" />
  <xs:element name="DisplayName" type="xs:string" />
  <xs:element name="IsFolder" type="xs:unsignedByte" />
  <xs:element name="CreationDate" type="xs:dateTime" />
  <xs:element name="LastModifiedDate" type="xs:dateTime" />
  <xs:element name="IsHidden" type="xs:unsignedByte" />
  <xs:element name="ContentLength" type="xs:unsignedByte" />
  <xs:element name="ContentType" type="xs:unsignedByte" />
</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
(none)	<b>DocumentLibrary</b>	
airsynibase	<b>AirSyncBase</b>	<a href="#">[MS-ASAIRS]</a>
itemoperations	<b>ItemOperations</b>	<a href="#">[MS-ASCMD]</a> section 2.2.2.8
search	<b>Search</b>	<a href="#">[MS-ASCMD]</a> section 2.2.2.14
xs	<b>http://www.w3.org/2001/XMLSchema</b>	<a href="#">[XMLSCHEMA1]</a>

## 2.2.2 Elements

Elements of the **Document** class are defined in two namespaces: **DocumentLibrary** and **AirSyncBase**. All **Document** class elements are specified in this document. However, elements defined in the **AirSyncBase** namespace are further specified in [\[MS-ASAIRS\]](#).

The following table summarizes the set of common XML schema element definitions defined by this specification. For details about how these elements are used by a particular operation, see sections [3.1.5.1](#), [3.1.5.2](#), [3.2.5.1](#), and [3.2.5.2](#).

Element name	Description
<b>LinkId</b> (section <a href="#">2.2.2.8</a> )	The link to the document, specified as a <b>Uniform Resource Identifier (URI)</b> .
<b>DisplayName</b> (section <a href="#">2.2.2.4</a> )	The name of the document, as displayed by the client.
<b>IsFolder</b> (section <a href="#">2.2.2.5</a> )	Specifies whether the item is a folder or a document.
<b>CreationDate</b> (section <a href="#">2.2.2.3</a> )	The date and time when the document was first created.
<b>LastModifiedDate</b> (section <a href="#">2.2.2.7</a> )	The date and time when the document or its properties was last modified.
<b>IsHidden</b> (section <a href="#">2.2.2.6</a> )	Specifies whether this is a hidden object.
<b>ContentLength</b> (section <a href="#">2.2.2.1</a> )	The estimated size of the document, in bytes.
<b>ContentType</b> (section <a href="#">2.2.2.2</a> )	The <b>Multipurpose Internet Mail Extensions (MIME)</b> type of the binary-encoded content or content encoded with <b>base64 encoding</b> .

### 2.2.2.1 ContentLength

The **ContentLength** element is a required child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) for **Document** class items in a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2) that specifies the estimated size, in bytes, of the document. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

The value of this element is an **unsignedByte** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

Because documents accessed by using the ActiveSync protocol can be shared across a network, it is possible that the value of the **ContentLength** element will differ between the time the document description is retrieved and the time the document is accessed.

### 2.2.2.2 ContentType

The **ContentType** element is a required child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) for **Document** class items in a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2) that specifies the MIME type of the binary-encoded content or document encoded with base64 encoding, if known. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

The value of this element is an **unsignedByte** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.7.

### 2.2.2.3 CreationDate

The **CreationDate** element is a required child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) for **Document** class items in a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2) that specifies the date and time when the document was created. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

The value of this element is a **datetime** data type in **Coordinated Universal Time (UTC)** format, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

### 2.2.2.4 DisplayName

The **DisplayName** element is a required child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) for **Document** class items in a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2) that specifies the name of the document as it is displayed to the user. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

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

### 2.2.2.5 IsFolder

The **IsFolder** element is a required child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) for **Document** class items in a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2) that specifies whether the item is a folder. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

The value of this element is an **unsignedByte** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.7. Valid values for this element are as follows.

Value	Meaning
0	The item is not a folder.
1	The item is a folder.

### 2.2.2.6 IsHidden

The **IsHidden** element is a required child element of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118.2) for **Document** class items in a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2) that specifies whether the document or folder is a hidden object. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

The value of this element is an **unsignedByte** data type, as specified in [\[MS-ASDTYPE\]](#) section 2.7. The value of the **IsHidden** element MUST be one of the following values.

Value	Meaning
0	The document or folder is not hidden.
1	The document or folder is hidden.

### 2.2.2.7 LastModifiedDate

The **LastModifiedDate** element is a required child element of the **search:Properties** element ([MS-ASCMD] section 2.2.3.118.2) for **Document** class items in a **Search** command response ([MS-ASCMD] section 2.2.2.14.2) that specifies the date and time that the document or its properties was last modified. For more details about the **Search** command response for **Document** class items, see section [3.2.5.2](#).

The value of this element is a **datetime** data type in Coordinated Universal Time (UTC) format, as specified in [\[MS-ASDTYPE\]](#) section 2.3.

### 2.2.2.8 LinkId

The **LinkId** element specifies the link to the document in the form of a URI. It is a required child element of the **itemoperations:Fetch** element ([MS-ASCMD] section 2.2.3.60.1) for **Document** class items in an **ItemOperation** command request ([MS-ASCMD] section 2.2.2.8.2) and an **ItemOperations** command response ([MS-ASCMD] section 2.2.2.8.3), a required child element of the **search:EqualTo** element ([MS-ASCMD] section 2.2.3.56) for **Document** class items in a **Search** command request ([MS-ASCMD] section 2.2.2.14.1), and a required child element of the **search:Properties** element ([MS-ASCMD] section 2.2.3.118.2) for **Document** class items in a **Search** command response ([MS-ASCMD] section 2.2.2.14.2).

For more details about how the **LinkId** element is used by the **ItemOperations** command request, the **Search** command request, the **ItemOperations** command response, and the **Search** command response, see sections [3.1.5.1](#), [3.1.5.2](#), [3.2.5.1](#), and [3.2.5.2](#), respectively.

## 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.

**Document class:** A structured XML text block that adheres to the XML schema defined in section [2.2](#). It is returned by the server as part of a full XML response to the client command requests specified in section [3.1.5](#).

**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 Searching for Documents

The client searches for **Document** class data on a server by sending a **Search** command request ([\[MS-ASCMD\]](#) section 2.2.2.14.1) to the server.

##### 3.1.4.2 Requesting Details for Specific Documents

The client requests **Document** class data for one or more individual documents 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 2.2.3.60.1).

##### 3.1.4.3 Requesting the Document Body from the Server

Because the body of the document is not returned as part of the **Document** class data, the client submits the value of the **LinkID** element (section [2.2.2.8](#)) in a separate **ItemOperations** command request ([\[MS-ASCMD\]](#) section 2.2.2.8.2) to obtain the body of the document. The body of the document is returned as either text encoded with base64 encoding in the **itemoperations:Data** element ([\[MS-ASCMD\]](#) section 2.2.3.37.1) of the **ItemOperations** command response ([\[MS-ASCMD\]](#) section 2.2.2.8.3) or as binary data, depending on the content type that the client requested. For details about how the client requests a particular content type in an **ItemOperations** command request, see section [3.1.5.1](#).

### 3.1.5 Message Processing Events and Sequencing Rules

The following sections define how various elements of the **Document** class are used in the context of specific ActiveSync commands. For more details about the commands themselves, see [\[MS-ASCMD\]](#).

#### 3.1.5.1 ItemOperations Command Request

A client uses an **ItemOperations** command request ([\[MS-ASCMD\]](#) section 2.2.2.8.2) that contains one or more **itemoperations:Fetch** elements ([\[MS-ASCMD\]](#) section 2.2.3.60.1) to retrieve data from the server for one or more individual documents.

The **LinkId** element (section [2.2.2.8](#)) is the only **Document** class element that can be included in an **ItemOperations** command request. The **LinkId** element is transmitted as a child element of the **itemoperations:Fetch** element ([\[MS-ASCMD\]](#) section 2.2.3.60.1).

A client can use the HTTP **header (2) MS-ASAcceptMultiPart: T** to specify that the server return the document data in multipart binary format. If this header is not used, the document data is returned as text. For more details about this header (2), see [\[MS-ASCMD\]](#) section 2.2.2.8.1.

The **ItemOperations** command is specified in [\[MS-ASCMD\]](#) section 2.2.2.8.

#### 3.1.5.2 Search Command Request

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

The **LinkId** element (section [2.2.2.8](#)) is a required element in a **Search** command request, and is transmitted as a child element of the **search:EqualTo** element ([\[MS-ASCMD\]](#) section 2.2.3.56). The **search:Value** element ([\[MS-ASCMD\]](#) section 2.2.3.169) can also be included as a child of the **search:EqualTo** element. The value of the **search:Value** element is a string that describes the Universal Naming Convention (UNC) path of a file on a file share. A full example of this usage is provided in [\[MS-ASCMD\]](#) section 4.22.1.

If the **LinkId** element is not included in a **Search** command request, then the server MUST respond with protocol error 2.

The **Search** command is specified in [\[MS-ASCMD\]](#) section 2.2.2.14.

#### 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.

**Document class:** A structured XML text block that adheres to the XML schema defined in section [2.2](#). It is returned by the server as part of a full XML response to the client command requests specified in section [3.1.5](#).

**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-Layered Triggered Events

#### 3.2.4.1 Searching for Documents

Searching for **Document** class data is initiated by the client, as specified in section [3.1.4.1](#). The server responds with a **Search** command response ([\[MS-ASCMD\]](#) section 2.2.2.14.2).

#### 3.2.4.2 Retrieving Details for Specific Documents

Retrieval of **Document** class data for one or more individual documents is initiated by the client, as specified in section [3.1.4.2](#). The server responds with an **ItemOperations** command response ([\[MS-ASCMD\]](#) section 2.2.2.8.3).

#### 3.2.4.3 Retrieving the Document Body

Retrieval of the body of a document 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), which returns the body of the document either as text encoded with base64 encoding in the **itemoperations:Data** element ([\[MS-ASCMD\]](#) section 2.2.2.8.3) of the response or as binary text in multiple parts if the command request was a multi-part request.

### 3.2.5 Message Processing Events and Sequencing Rules

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

#### 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 individual documents, as specified in section [3.1.5.1](#), the server responds with an **ItemOperations** command response ([\[MS-ASCMD\]](#) section 2.2.2.8.3).

The server MUST return a **Document** class XML block for every item that matches the criteria specified in the client command request. The server can return zero or more **Document** class blocks in its response, depending on how many document items match the criteria specified in the client command request.

The **LinkId** element (section [2.2.2.8](#)) is the only **Document** class element returned in an **ItemOperations** command response. The **LinkId** element is transmitted as a child element of the **ItemOperations:Fetch** element ([\[MS-ASCMD\]](#) section 2.2.3.60.1).

If an **ItemOperations** command request for the body of the document was made using the **MS-ASAcceptMultiPart: T** header (2), then the server MUST respond by providing the document body as binary data in multiple parts. Otherwise, the server MUST transmit the document as data encoded with base64 encoding within the **itemoperations:Data** element ([\[MS-ASCMD\]](#) section 2.2.3.37.1) of the **ItemOperations** command response. For more details about content delivery for documents, see [\[MS-ASCMD\]](#) section 2.2.2.8.1.

The **ItemOperations** command is specified in [\[MS-ASCMD\]](#) 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 **Document** 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).

The server MUST return a **Document** class XML block for every item that matches the criteria specified in the client command request. The server can return zero or more **Document** class blocks in its response, depending on how many document items match the criteria specified in the client command request.

Any of the elements for the **Document** class, as specified in section [2.2.2](#), can be included in a **Search** command response. **Document** class elements are returned as child elements of the **search:Properties** element ([\[MS-ASCMD\]](#) section 2.2.3.118) in a **Search** command response.

The **Search** command is specified in [\[MS-ASCMD\]](#) section 2.2.2.14.

### 3.2.6 Timer Events

None.

### 3.2.7 Other Local Events

None.

## 4 Protocol Examples

### 4.1 Searching for a Document by LinkId

The following example demonstrates a client request to search for a document by using the specified **LinkId** element (section [2.2.2.8](#)) value (which in this example is the UNC path of the document), and the server response.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<Search xmlns="Search:" xmlns:A="DocumentLibrary:">
  <Store>
    <Name>DocumentLibrary</Name>
    <Query>
      <EqualTo>
        <A:LinkId/>
        <Value>\\EXCH-D-810\DocumentShare\document.txt</Value>
      </EqualTo>
    </Query>
    <Options>
      <Range>0-999</Range>
    </Options>
  </Store>
</Search>
```

Response:

```
<?xml version="1.0" encoding="utf-8"?>
<Search
xmlns:documentlibrary="DocumentLibrary:" >
  <Status>1 Success</Status>
  <Response>
    <Store>
      <Status>1 Success</Status>
      <Result>
        <Properties>
          <documentlibrary:LinkId>\\exch-d-
810\DocumentShare\document.txt</documentlibrary:LinkId>
          <documentlibrary:DisplayName>document.txt</documentlibrary:DisplayName>
          <documentlibrary:IsFolder>0</documentlibrary:IsFolder>
          <documentlibrary:CreationDate>2009-11-
11T17:07:08.156Z</documentlibrary:CreationDate>
          <documentlibrary:LastModifiedDate>2009-11-
11T17:07:17.613Z</documentlibrary:LastModifiedDate>
          <documentlibrary:IsHidden>0</documentlibrary:IsHidden>
          <documentlibrary:ContentLength>13</documentlibrary:ContentLength>
          <documentlibrary:ContentType>text/plain</documentlibrary:ContentType>
        </Properties>
      </Result>
      <Range>0-0</Range>
      <Total>1</Total>
    </Store>
  </Response>
</Search>
```

## 4.2 Retrieving the Text of a Document by Using the ItemOperations Command

The following example demonstrates a client request to retrieve the data for a document by using the **ItemOperations** command ([\[MS-ASCMD\]](#) section 2.2.2.8), and the server response. In the XML response below, the value of the **itemoperations:Data** element ([\[MS-ASCMD\]](#) section 2.2.3.37.1) has been truncated for the sake of brevity.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations xmlns:documentlibrary="DocumentLibrary:" xmlns="ItemOperations:">
  <Fetch>
    <Store>DocumentLibrary</Store>
    <documentlibrary:LinkId>\\EXCH-D-810\DocumentShare\Word
Document.docx</documentlibrary:LinkId>
  </Fetch>
</ItemOperations>
```

Response:

```
<?xml version="1.0" encoding="utf-8"?>
<ItemOperations
xmlns:documentlibrary="DocumentLibrary:"
>
  <Status>1</Status>
  <Response>
    <Fetch>
      <Status>1</Status>
      <documentlibrary:LinkId>\\EXCH-D-810\DocumentShare\Word
Document.docx</documentlibrary:LinkId>
      <Properties>

<Data>UESDBBQABgAIAAAAIQDd/+ImYzsKNchci+VLqQHEkJU4+RzBv1jKu6vsf0VwOamabaWQ1pZ+9AtcdYN1/WD103G
n4KZu/Yy4kVyAdhb9kuYipsSc
ZyjWop9SwabDDPJZ2RYqwkNuBpotX1RP9fi46FLAmhCYnP83x1nANaXg902aJ5x687HyFZLBZ9e/tDg7MvaD4BAAD//wM
AUESDBBQABgAIAAAAIQDWZLNR
+gAAADEDAACAAgBd29yZC9fcmVscy9kb2NlbWVudC54bWwucmVscyCiBAEooAABAAAAAAAAAAAAAAAAAAAAAAAAAAAA
AAAAAAAAAAAAAAAA...</Data>
      <Version>2009-11-11T19:15:45.177Z</Version>
    </Properties>
  </Fetch>
</Response>
</ItemOperations>
```

## 4.3 Browsing a Document Folder

The following example demonstrates how a client can use the **Search** command request ([\[MS-ASCMD\]](#) section 2.2.2.14.1) to browse a folder on a remote share. The client submits a request for a folder to view, and the server responds with a list of the folder's contents.

Request:

```
<?xml version="1.0" encoding="utf-8"?>
<Search xmlns="Search:" xmlns:documentlibrary="DocumentLibrary:">
  <Store>
    <Name>DocumentLibrary</Name>
```

```

<Query>
  <EqualTo>
    <documentlibrary:LinkId/>
    <Value>\\myserver\myshare</Value>
  </EqualTo>
</Query>
<Options>
  <Range>0-999</Range>
</Options>
</Store>
</Search>

```

## Response:

```

<?xml version="1.0" encoding="utf-8"?>
<Search xmlns="Search:" xmlns:documentlibrary="DocumentLibrary:">
  <Status>1</Status>
  <Response>
    <Store>
      <Status>1</Status>
      <Result>
        <Properties>
          <documentlibrary:LinkId/>\\myserver\myshare</documentlibrary:LinkId>
          <documentlibrary:DisplayName>d$</documentlibrary:DisplayName>
          <documentlibrary:IsFolder>1</documentlibrary:IsFolder>
          <documentlibrary:CreationDate>2007-10-
02T00:34:28.686Z</documentlibrary:CreationDate>
          <documentlibrary:LastModifiedDate>2009-11-
13T21:48:20.919Z</documentlibrary:LastModifiedDate>
          <documentlibrary:IsHidden>1</documentlibrary:IsHidden>
        </Properties>
      </Result>
      <Result>
        <Properties>
          <documentlibrary:LinkId/>\\myserver\myshare\blah.txt</documentlibrary:LinkId>
          <documentlibrary:DisplayName>blah.txt</documentlibrary:DisplayName>
          <documentlibrary:IsFolder>0</documentlibrary:IsFolder>
          <documentlibrary:CreationDate>2007-10-
02T18:26:52.265Z</documentlibrary:CreationDate>
          <documentlibrary:LastModifiedDate>2009-04-
02T02:57:55.843Z</documentlibrary:LastModifiedDate>
          <documentlibrary:IsHidden>1</documentlibrary:IsHidden>
        </Properties>
      </Result>
      <Result>
        <Properties>
          <documentlibrary:LinkId/>\\myserver\myshare\foo</documentlibrary:LinkId>
          <documentlibrary:DisplayName>foo</documentlibrary:DisplayName>
          <documentlibrary:IsFolder>1</documentlibrary:IsFolder>
          <documentlibrary:CreationDate>2009-10-
13T00:43:44.660Z</documentlibrary:CreationDate>
          <documentlibrary:LastModifiedDate>2009-10-
13T00:46:17.421Z</documentlibrary:LastModifiedDate>
          <documentlibrary:IsHidden>0</documentlibrary:IsHidden>
        </Properties>
      </Result>
      <Range>0-2</Range>
      <Total>3</Total>
    </Store>
  </Response>

```

```
</Store>  
</Response>  
</Search>
```

## **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 2007 Service Pack 1 (SP1)
- Microsoft® Exchange Server 2010

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-ASDOC] protocol document between the March 2011 and August 2011 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](mailto:protocol@microsoft.com).

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
<a href="#">1</a> <a href="#">Introduction</a>	Added information about which sections of the specification are normative and which sections are informative.	Y	Content updated for template compliance.
<a href="#">1.3</a> <a href="#">Overview</a>	Added information about when document data is included in command requests and responses.	N	Content updated.
<a href="#">1.4</a> <a href="#">Relationship to Other Protocols</a>	Added information about this protocol's relationship to [MS-ASWBXML].	N	New content added.
<a href="#">2.1</a> <a href="#">Transport</a>	Revised first paragraph to focus on the ActiveSync Document Class Protocol instead of the Document class.	N	Content updated.
<a href="#">2.1</a> <a href="#">Transport</a>	Moved information about the namespaces in which Document class elements are defined to the Elements section.	N	Content removed.
<a href="#">2.1</a> <a href="#">Transport</a>	Moved information about WBXML from the Message Syntax section.	N	New content added.
<a href="#">2.1</a> <a href="#">Transport</a>	Removed information about parent elements of Document class elements.	N	Content removed.
<a href="#">2.2</a> <a href="#">Message Syntax</a>	Moved information about WBXML to the Transport section.	N	Content removed.
<a href="#">2.2</a>	Added information to specify what the	N	New content

<b>Section</b>	<b>Tracking number (if applicable) and description</b>	<b>Major change (Y or N)</b>	<b>Change type</b>
<a href="#">Message Syntax</a>	protocol defines.		added.
<a href="#">2.2.1 Namespaces</a>	Changed the value of Prefix for the DocumentLibrary Namespace URI from "None" to "(none)".	N	Content updated.
<a href="#">2.2.2 Elements</a>	Removed the link to the glossary from the word "folder".	N	Content updated.
<a href="#">2.2.2 Elements</a>	Changed the sequence of subsections within the Elements section so that the subsections are listed alphabetically.	N	Content updated.
<a href="#">2.2.2 Elements</a>	Moved information about namespaces in which Document class elements are defined from the Transport section.	N	New content added.
<a href="#">2.2.2 Elements</a>	Added specific section references for details about how the elements are used by operations.	N	Content updated.
<a href="#">2.2.2.1 ContentLength</a>	Added details about the element's parent element and the element's data type.	N	Content updated.
<a href="#">2.2.2.1 ContentLength</a>	Removed information about requirements related to the command request.	Y	Content removed.
<a href="#">2.2.2.2 ContentType</a>	Added details about the element's parent element and the element's data type.	N	Content updated.
<a href="#">2.2.2.2 ContentType</a>	Removed information about requirements related to the command request and about the element's irrelevance to the ItemOperations command.	Y	Content removed.
<a href="#">2.2.2.3 CreationDate</a>	Added details about the element's parent element and the element's data type.	N	Content updated.
<a href="#">2.2.2.3 CreationDate</a>	Removed information about requirements related to the command request.	Y	Content removed.
<a href="#">2.2.2.4 DisplayName</a>	Added details about the element's parent element and the element's data type.	N	Content updated.
<a href="#">2.2.2.4 DisplayName</a>	Removed information about requirements related to the command request.	Y	Content removed.
<a href="#">2.2.2.5 IsFolder</a>	Added details about the element's parent element and the element's data type.	N	Content updated.
<a href="#">2.2.2.5 IsFolder</a>	Removed information about requirements related to the command request.	Y	Content removed.
<a href="#">2.2.2.6 IsHidden</a>	Added details about the element's parent element.	N	Content updated.

<b>Section</b>	<b>Tracking number (if applicable) and description</b>	<b>Major change (Y or N)</b>	<b>Change type</b>
<a href="#">2.2.2.6 IsHidden</a>	Removed information about requirements related to the command request.	Y	Content removed.
<a href="#">2.2.2.7 LastModifiedDate</a>	Added details about the element's parent element and the element's data type.	N	Content updated.
<a href="#">2.2.2.7 LastModifiedDate</a>	Removed information about requirements related to the command request.	Y	Content removed.
<a href="#">2.2.2.8 LinkId</a>	Added details about the element's parent elements and specific section references for details about how the element is used by operations.	N	Content updated.
<a href="#">3.1.4.2 Requesting Details for Specific Documents</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.1.4.2 Requesting Details for Specific Documents</a>	Changed section title from "Requesting Details for a Specific Document" to "Requesting Details for Specific Documents".	N	Content updated.
<a href="#">3.1.4.3 Requesting the Document Body from the Server</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.1.5.1 ItemOperations Command Request</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.1.5.2 Search Command Request</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.2.1 Abstract Data Model</a>	Moved information about requirements for the server to return certain data to the ItemOperations Command Response section and the Search Command Response section.	N	Content removed.
<a href="#">3.2.4.1 Searching for Documents</a>	Replaced details about client behavior with a reference to the Searching for Documents section.	N	Content updated.
<a href="#">3.2.4.2 Retrieving Details for Specific Documents</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.2.4.2 Retrieving Details for Specific Documents</a>	Replaced details about client behavior with a reference to the Requesting Details for Specific Documents section.	N	Content updated.
<a href="#">3.2.4.3 Retrieving the Document Body</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.

<b>Section</b>	<b>Tracking number (if applicable) and description</b>	<b>Major change (Y or N)</b>	<b>Change type</b>
<a href="#">3.2.4.3 Retrieving the Document Body</a>	Changed section title from "Requesting the Document Body From the Server" to "Retrieving the Document Body".	N	Content updated.
<a href="#">3.2.4.3 Retrieving the Document Body</a>	Replaced details about client behavior with a reference to the Requesting the Document Body from the Server section.	N	Content updated.
<a href="#">3.2.5.1 ItemOperations Command Response</a>	Moved information about requirements for the server to return certain data from the Abstract Data Model section.	N	New content added.
<a href="#">3.2.5.1 ItemOperations Command Response</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.2.5.1 ItemOperations Command Response</a>	Replaced details about client behavior with a reference to the ItemOperations Command Request section.	N	Content updated.
<a href="#">3.2.5.2 Search Command Response</a>	Moved information about requirements for the server to return certain data from the Abstract Data Model section.	N	New content added.
<a href="#">3.2.5.2 Search Command Response</a>	Revised sentence structure and added specific section references for commands and elements.	N	Content updated.
<a href="#">3.2.5.2 Search Command Response</a>	Added a reference to the Search Command Request section for details about the client request.	N	Content updated.
<a href="#">4.1 Searching for a Document by LinkId</a>	Updated the introductory sentence and removed the header from the request and response examples.	N	Content updated.
<a href="#">4.2 Retrieving the Text of a Document by Using the ItemOperations Command</a>	Updated the introductory sentence and removed the header from the request and response examples.	N	Content updated.
<a href="#">4.3 Browsing a Document Folder</a>	Updated the introductory sentence and removed the header from the request and response examples.	N	Content updated.

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