

[MS-OXWSBTRF]: Bulk Transfer Web Service Protocol Specification

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Revision Summary

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1 Introduction

This document specifies the Bulk Transfer Web Service protocol, which is used to export and upload streamed item data between the server and the client.

1.1 Glossary

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

Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)
mailbox
message
SOAP message
Web Services Description Language (WSDL)
WSDL message
WSDL port type
XML
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. 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-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)", April 2008.

[MS-OXWSCDATA] Microsoft Corporation, "[Common Web Service Data Types](#)", July 2009.

[MS-OXWSCORE] Microsoft Corporation, "[Core Items Web Service Protocol Specification](#)", July 2009.

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

[RFC2396] Berners-Lee, T., Fielding, R., and Masinter, L., "Uniform Resource Identifiers (URI): Generic Syntax", RFC 2396, August 1998, <http://www.ietf.org/rfc/rfc2396.txt>

[RFC2818] Rescorla, E., "HTTP Over TLS", RFC 2818, May 2000, <http://www.ietf.org/rfc/rfc2818.txt>

[RFC3066] Alvestrand, H., "Tags for the Identification of Languages", RFC 3066, BCP 47, January 2001, <http://www.ietf.org/rfc/rfc3066.txt>

[SOAP1.1] Box, D., Ehnebuske, D., Kakivaya, G., et al., "Simple Object Access Protocol (SOAP) 1.1", W3C Note, May 2000, <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>

[WSDL] Christensen, E., Curbera, F., Meredith, G., and Weerawarana, S., "Web Services Description Language (WSDL) 1.1", W3C Note, March 2001, <http://www.w3.org/TR/2001/NOTE-wsdl-20010315>

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

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

[XMLSCHEMA2] Biron, P., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes", W3C Recommendation, May 2001, <http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/>

1.2.2 Informative References

None.

1.3 Overview

Bulk data transfer enables clients and servers to move large amounts of information. The Bulk Transfer Web Service protocol enables clients to upload large streams of data to a **mailbox** server and download large streams from of data a mailbox server.

1.4 Relationship to Other Protocols

The Bulk Transfer Web Service protocol uses SOAP [\[SOAP1.1\]](#) over **HTTPS** [\[RFC2818\]](#), as shown in Figure 1.

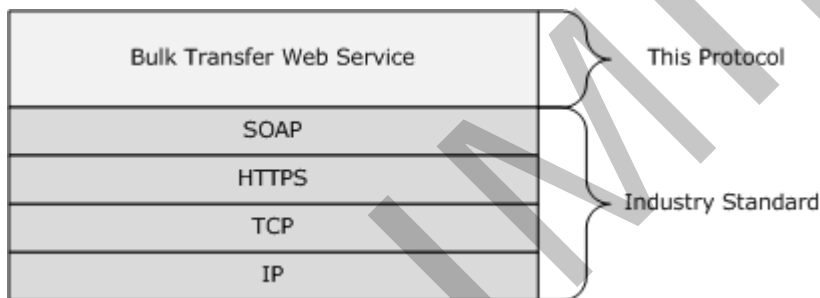


Figure 1: Bulk Transfer Web Service protocol HTTPS stack

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

The protocol is applicable to environments that stream items into and out of a mailbox by using Web services. This Web service protocol is applicable to SOAP-based clients [\[SOAP1.1\]](#).

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol uses SOAP 1.1, as specified in section [2.1](#).

- **Protocol Versions:** This protocol specifies only one **WSDL port type** version.
- **Security and Authentication Methods:** This protocol relies on the Web server that is hosting it to perform authentication.
- **Capability Negotiation:** None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

PRELIMINARY

2 Messages

2.1 Transport

The SOAP version used for this protocol is SOAP 1.1, as specified in [\[SOAP1.1\]](#).

2.2 Common Message Syntax

This section contains common definitions used by this protocol. The syntax of the definitions uses **XML schema**, as defined in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), and **Web Services Description Language (WSDL)**, as defined in [\[WSDL\]](#).

2.2.1 Namespaces

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

Prefix	Namespace URI	Reference
soap	http://schemas.xmlsoap.org/wsdl/soap/	[SOAP1.1]
tns	http://schemas.microsoft.com/exchange/services/2006/messages	
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
t	http://schemas.microsoft.com/exchange/services/2006/types	
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]
m	http://schemas.microsoft.com/exchange/services/2006/messages	
none	http://schemas.microsoft.com/exchange/services/2006/messages	This is the target namespace for the WSDL file and the messages schema. See sections 6.1 and 6.2 .
none	http://schemas.microsoft.com/exchange/services/2006/types	This is the target namespace for the types schema. See section 6.3 .

2.2.2 Messages

This specification does not define any common message definitions.

2.2.3 Elements

This specification does not define any common XML schema element definitions.

2.2.4 Complex Types

This specification does not define any common XML schema complex type definitions.

2.2.5 Simple Types

This specification does not define any common XML schema simple types definitions.

2.2.6 Attributes

This specification does not define any common XML schema attribute definitions.

2.2.7 Groups

This specification does not define any common XML schema group definitions.

2.2.8 Attribute Groups

This specification does not define any common XML schema attribute group definitions.

2.2.9 Common Data Structures

This specification does not define any common data structure definitions.

PRELIMINARY

3 Protocol Details

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the client side of this protocol. Calls made by the higher-layer protocol or application are passed directly to the transport, and the results returned by the transport are passed directly back to the higher-layer protocol or application.

3.1 ExchangeServicePortType Server Details

The Conversations Web Service protocol defines a single WSDL port type.

Operation	Description
ExportItems	Specifies the WSDL message for exporting items out of a mailbox.
UploadItems	Specifies the WSDL message for uploading items into a mailbox.

3.1.1 Abstract Data Model

None.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

The following table summarizes the list of WSDL operations that are defined by this specification.

Operation	Description
ExportItems (section 3.1.4.1)	Specifies the WSDL messages for exporting items out of a mailbox.
UploadItems (section 3.1.4.2)	Specifies the WSDL messages for uploading items into a mailbox.

3.1.4.1 ExportItems

The **ExportItems** operation exports items from a mailbox.

```
<wsdl:operation name="ExportItems">
  <wsdl:input message="tns:ExportItemsSoapIn"/>
  <wsdl:output message="tns:ExportItemsSoapOut"/>
</wsdl:operation>
```

Request

Message Format	Description
tns:ExportItemsSoapIn	Specifies the SOAP message that represents a request to export items out

Message Format	Description
	of a mailbox.

Response

Message Format	Description
tns:ExportItemsSoapOut	Specifies the SOAP message that represents a response that contains exported items.

3.1.4.1.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

Message	Description
ExportItemsSoapIn 3.1.4.1.1.1	Specifies the SOAP message that represents a request to export items out of a mailbox.
ExportItemsSoapOut 3.1.4.1.1.2	Specifies the SOAP message that represents a response that contains exported items.

3.1.4.1.1.1 tns:ExportItemsSoapIn Message

The **ExportItemsSoapIn** message specifies the SOAP message that represents a request to export items out of a mailbox.

```
<wsdl:message name="ExportItemsSoapIn">
  <wsdl:part name="request" element="tns:ExportItems"/>
  <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
  <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **ExportItemSoapIn** message contains four parts, as described in the following table.

Part name	Element/type	Description
request	<ExportItems> (section 3.1.4.1.2.1)	Specifies the SOAP body of the request.
Impersonation	<ExchangeImpersonation> ([MS-OXWSCDATA] section 2.2.4.2)	Specifies the identifier of the account to impersonate.
MailboxCulture	<MailboxCulture> ([MS-OXWSCDATA] section 2.2.4.5)	Specifies the culture to use for accessing the server. The cultures are defined by [RFC3066] .
RequestVersion	<RequestServerVersion> ([MS-OXWSCDATA] section 2.2.4.7)	Specifies the target schema version.

3.1.4.1.1.2 tns:ExportItemsSoapOut Message

The **ExportItemsSoapOut** message specifies the SOAP message that represents a response that contains exported items.

```
<wsdl:message name="ExportItemsSoapOut">
  <wsdl:part name="ExportItemsResult" element="tns:ExportItemsResponse"/>
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **ExportItemsSoapOut** message contains two parts, as described in the following table.

Part name	Element/type	Description
ExportItemsResult	<ExportItemsResponse> (section 3.1.4.1.2.2)	Specifies the SOAP body of the response.
ServerVersion	<ServerVersion> ([MS-OXWSCDATA] section 2.2.4.8)	Specifies the server version.

3.1.4.1.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

Element	Description
<ExportItems> 3.1.4.1.2.1	Specifies a request to export items from a mailbox.
<ExportItemsResponse> 3.1.4.1.2.2	Specifies a response that contains exported items.

3.1.4.1.2.1 ExportItems Element

The <ExportItems> element specifies a response that contains exported items. This element **MUST** be present.

```
<xs:element name="ExportItems"
  type="m:ExportItemsType"
/>
```

3.1.4.1.2.2 ExportItemsResponse Element

The <ExportItemsResponse> element specifies a response to a request to export items from a mailbox. This element **MUST** be present.

```
<xs:element name="ExportItemsResponse"
  type="m:ExportItemsResponseType"
/>
```

3.1.4.1.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

Complex type	Description
ExportItemsResponseMessageType (section 3.1.4.1.3.1)	Specifies a single exported item.
ExportItemsResponseType (section 3.1.4.1.3.2)	Specifies a response to export items from a mailbox.
ExportItemsType (section 3.1.4.1.3.3)	Specifies a request to export items out of a mailbox.
NonEmptyArrayOfItemIdsType (section 3.1.4.1.3.4)	Specifies the array of items to export from a mailbox.

3.1.4.1.3.1 m:ExportItemsResponseMessageType Complex Type

The **ExportItemsResponseMessageType** complex type specifies a single exported item.

```
<xs:complexType name="ExportItemsResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseType"
    >
      <xs:sequence>
        <xs:element name="ItemId"
          type="t:ItemIdType"
          minOccurs="0"
          maxOccurs="1"
        />
        <xs:element name="Data"
          type="xs:base64Binary"
          minOccurs="0"
          maxOccurs="1"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Child Elements

Element	Type	Description
ItemId	t:ItemIdType	Specifies the item identifier of a single exported item. This element MUST be present if the export operation is successful. The ItemIdType complex type is specified in [MS-OXWSCORE] section 2.2.3.13.
Data	xs:base64Binary	Specifies the data of a single exported item. This element MUST be present if the export operation is successful. The xs:base64Binary type is specified in [XMLSCHEMA] .

3.1.4.1.3.2 ExportItemsResponseType Complex Type

The **ExportItemsResponseType** complex types specifies a response to export items from a mailbox.

```
<xs:complexType name="ExportItemsResponseType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseResponseMessageType"
    />
  </xs:complexContent>
</xs:complexType>
```

3.1.4.1.3.3 ExportItemsType Complex Type

The **ExportItemsType** complex type specifies a request to export items out of a mailbox.

```
<xs:complexType name="ExportItemsType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
    <xs:sequence>
      <xs:element name="ItemIds"
        type="t:NonEmptyArrayOfItemIdsType"
        maxOccurs="1"
        minOccurs="1"
      />
    </xs:sequence>
  </xs:complexContent>
</xs:complexType>
```

Child Elements

Element	Type	Description
ItemIds	t:NonEmptyArrayOfItemIdsType	Specifies the item identifier array of the items to export. This element MUST be present.

3.1.4.1.3.4 t:NonEmptyArrayOfItemIdsType Complex Type

The **NonEmptyArrayOfItemIdsType** complex type specifies the array of items to export from a mailbox.

```
<xs:complexType name="NonEmptyArrayOfItemIdsType">
  <xs:sequence>
    <xs:element name="ItemId"
      type="t:ItemIdType"
      maxOccurs="unbounded"
      minOccurs="1"
    />
  </xs:sequence>
</xs:complexType>
```

```

</xs:sequence>
</xs:complexType>

```

Child Elements

Element	Type	Description
ItemId	t:ItemIdType	Specifies the item identifier of an item to export from a mailbox. At least one <ItemId> element MUST be present. The ChangeKey of the ItemIdType complex type ([MS-OXWSCORE] section 2.2.3.13) MUST be ignored.

3.1.4.2 UploadItems

The **UploadItems** operation uploads items to a mailbox.

```

<wsdl:operation name="UploadItems">
  <wsdl:input message="tns:UploadItemsSoapIn"/>
  <wsdl:output message="tns:UploadItemsSoapOut"/>
</wsdl:operation>

```

Request

Message Format	Description
tns:UploadItemsSoapIn	Specifies the SOAP message that represents a request to upload items into a mailbox.

Response

Message Format	Description
tns:UploadItemsSoapOut	Specifies the SOAP message that represents a response that contains the results of an attempt to upload items into a mailbox.

3.1.4.2.1 Messages

The following table summarizes the set of WSDL message definitions that are specific to this operation.

Message	Description
UploadItemsSoapIn (section 3.1.4.2.1.1)	Specifies the SOAP message that represents a request to upload items into a mailbox.
UploadItemsSoapOut (section 3.1.4.2.1.2)	Specifies the SOAP message that represents a response that contains the results of an attempt to upload items into a mailbox.

3.1.4.2.1.1 tns:UploadItemsSoapIn Message

The **UploadItemsSoapIn** message specifies the SOAP message that represents a request to upload items into a mailbox.

```

<wsdl:message name="UploadItemsSoapIn">
  <wsdl:part name="request" element="tns:UploadItems"/>
  <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
  <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>

```

The **UploadItemsSoapIn** message contains four parts, as described in the following table.

Part Name	Element	Description
request	<UploadItems> (section 3.1.4.2.2.1)	Specifies the SOAP body of the request.
Impersonation	<ExchangeImpersonation> ([MS-OXWSCDATA] section 2.2.4.2)	Specifies the identifier of the account to impersonate.
MailboxCulture	<MailboxCulture> ([MS-OXWSCDATA] section 2.2.4.5)	Specifies the culture to use for accessing the server. The cultures are defined by [RFC3066] .
RequestVersion	<RequestServerVersion> ([MS-OXWSCDATA] section 2.2.4.7)	Specifies the target schema version.

3.1.4.2.1.2 tns:UploadItemsSoapOut Message

The **UploadItemsSoapOut** message specifies the SOAP message that represents a response that contains the results of an attempt to upload items into a mailbox.

```

<wsdl:message name="UploadItemsSoapOut">
  <wsdl:part name="UploadItemsResult" element="tns:UploadItemsResponse"/>
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>

```

The **UploadItemsSoapOut** message contains two parts, as described in the following table.

Part Name	Element	Description
UploadItemsResult	<UploadItemsResponse> (section 3.1.4.2.2.2)	Specifies the SOAP body of the response.
ServerVersion	<ServerVersion> ([MS-OXWSCDATA] section 2.2.4.8)	Specifies the server version.

3.1.4.2.2 Elements

The following table summarizes the XML schema element definitions that are specific to this operation.

Element	Description
UploadItems (section 3.1.4.2.2.1)	Specifies the request to upload items into a mailbox. This element MUST be present.
UploadItemsResponse (section 3.1.4.2.2.2)	Specifies the response to an attempt to upload items. This element MUST be present.

Element	Description
3.1.4.2.2.2)	element MUST be present.

3.1.4.2.2.1 UploadItems Element

The <UploadItems> element specifies the request to upload items into a mailbox. This element MUST be present.

```
<xs:element name="UploadItems"
  type="m:UploadItemsType"
/>
```

3.1.4.2.2.2 UploadItemsResponse Element

The <UploadItemsResponse> element specifies the response to an attempt to upload items. This element MUST be present.

```
<xs:element name="UploadItemsResponse"
  type="m:UploadItemsResponseType"
/>
```

3.1.4.2.3 Complex Types

The following table summarizes the XML schema complex type definitions that are specific to this operation.

Complex Type	Description
NonEmptyArrayOfUploadItemsType (section 3.1.4.2.3.1)	Specifies the array of items to upload into a mailbox.
UploadItemsResponseMessageType (section 3.1.4.2.3.2)	Specifies the item identifier of an item that was uploaded into a mailbox.
UploadItemsResponseType (section 3.1.4.2.3.3)	Specifies the response messages for items for which an attempt was made to upload into a mailbox.
UploadItemsType (section 3.1.4.2.3.4)	Specifies the contents of a request to upload items into a mailbox.
UploadItemType (section 3.1.4.2.3.5)	Specifies the contents of single item to upload into a mailbox.

3.1.4.2.3.1 t:NonEmptyArrayOfUploadItemsType Complex Type

The **NonEmptyArrayOfUploadItemsType** complex type specifies the array of items to upload into a mailbox.

```
<xs:complexType name="NonEmptyArrayOfUploadItemsType">
  <xs:sequence>
```

```

<xs:element name="Item"
  type="t:UploadItemType"
  maxOccurs="unbounded"
  minOccurs="1"
/>
</xs:sequence>
</xs:complexType>

```

Child Elements

Element	Type	Description
Item	t:UploadItemType	Specifies the array of items to upload in to a mailbox. At least one <Item> element MUST be present.

3.1.4.2.3.2 m:UploadItemsResponseMessageType Complex Type

The **UploadItemsResponseMessageType** complex type specifies the item identifier of an item that was uploaded into a mailbox.

```

<xs:complexType name="UploadItemsResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseMessageType"
    >
      <xs:sequence>
        <xs:element name="ItemId"
          type="t:ItemIdType"
          minOccurs="0"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Child Elements

Element	Type	Description
ItemId	t:ItemIdType	Specifies the item identifier of an item that was uploaded into a mailbox. Only a single instance of this element can be present. The ItemIdType complex in type is specified in [MS-OXWSCORE] section 2.2.3.13.

3.1.4.2.3.3 m:UploadItemsResponseType Complex Type

The **UploadItemsResponseType** complex type specifies the response messages for which an attempt was made to update into a mailbox.

```

<xs:complexType name="UploadItemsResponseType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseResponseMessageType"
    >

```

```

    />
  </xs:complexContent>
</xs:complexType>

```

3.1.4.2.3.4 m:UploadItemsType Complex Type

The **UploadItemsType** complex type specifies the contents of a request to upload items in to a mailbox.

```

<xs:complexType name="UploadItemsType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
      <xs:sequence>
        <xs:element name="Items"
          type="t:NonEmptyArrayOfUploadItemsType"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Child Elements

Element	Type	Description
Items	t:NonEmptyArrayOfUploadItemsType	Specifies the collection of items to upload into a mailbox. This element MUST be present.

3.1.4.2.3.5 m:UploadItemType Complex Type

The **UploadItemType** complex type specifies the contents of a single item to upload in to a mailbox.

```

<xs:complexType name="UploadItemType">
  <xs:sequence>
    <xs:element name="ParentFolderId"
      type="t:FolderIdType"
      maxOccurs="1"
      minOccurs="1"
    />
    <xs:element name="ItemId"
      type="t:ItemIdType"
      maxOccurs="1"
      minOccurs="0"
    />
    <xs:element name="Data"
      type="xs:base64Binary"
      maxOccurs="1"
      minOccurs="1"
    />
  </xs:sequence>

```

```

<xs:attribute name="CreateAction"
  type="t:CreateActionType"
  use="required"
  />
</xs:complexType>

```

Child Elements

Element	Type	Description
ParentFolderId	t:FolderIdType	Specifies the target folder in which to place the upload item. This element MUST be present. The FolderIdType complex type is specified in [MS-OXWSCDATA] section 2.2.3.29.
ItemId	t:ItemIdType	Specifies the item identifier of the upload item. The ItemIdType complex type is specified in [MS-OXWSCORE] section 2.2.3.13.
Data	xs:base64Binary	Specifies the data of the upload item. This element MUST be present. The xs:base64Binary type is specified in [XMLSCHEMA] .

Attributes

Name	Type	Description
CreateAction	t:CreateActionType	Specifies the action for uploading items into a mailbox. This attribute MUST be present.

3.1.4.2.4 Simple Types

The following table summarizes the XML schema simple type definitions that are specific to this operation.

Simple type	Description
CreateActionType (section 3.1.4.2.4.1)	Specifies the action for uploading items into a mailbox.

3.1.4.2.4.1 CreateActionType Simple Type

The **CreateActionType** simple type specifies the action for uploading items into a mailbox.

```

<xs:simpleType>
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="CreateNew"
    />
    <xs:enumeration
      value="Update"
    />
    <xs:enumeration
      value="UpdateOrCreate"
    />
  </xs:restriction>
</xs:simpleType>

```

```
</xs:restriction>
</xs:simpleType>
```

Enumeration

The following values are defined by the simple type:

Value	Description
CreateNew	Specifies that a new copy of the original item is uploaded to the mailbox. The <ItemId> element in the UploadItemType complex type, as specified in section 3.1.4.2.3.5 , MUST NOT be specified. The <ItemId> element that is returned in the UploadItemsResponseMessageType complex type, as specified in section 3.1.4.2.3.2 , MUST contain the new item identifier.
Update	Specifies that the upload will update an item that is already present in the mailbox. The <ItemId> element in the UploadItemType complex type MUST be specified; otherwise, an error MUST be returned. If the target item is not in the original folder specified by the <ParentFolderId> element in the UploadItemType complex type, an error MUST be returned.
UpdateOrCreate	Specifies an attempt to first update the item. If the criteria for a successful update are met, the target item is updated. The <ItemId> element in the UploadItemType complex type MUST be specified; otherwise, an error MUST be returned. If the target item is not in the original folder specified by the <ParentFolderId> element in the UploadItemType complex type, the request MUST be processed as a CreateNew action.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

This section provides a simplified example of a request-response sequence for the **ExportItems** operation, as specified in section [3.1.4.1](#).

The following example shows an **ExportItems** request to export three items.

```
<?xml version="1.0" encoding="utf-8" ?>
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
  xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages">
  <soap:Header>
    <t:RequestServerVersion Version="Exchange2010_SP1" />
  </soap:Header>
  <soap:Body>
    <m:ExportItems>
      <m:ItemIds>
        <t:ItemId Id="AAMkAGYzZjZmRiUsidkC+NAAAAAY89GAAA=" />
        <t:ItemId Id="AAMkAGYzZjZmRiUsidkC+NAAAAAY89FAAA=" />
        <t:ItemId Id="AAMkAGYzZjZmRiUsidkC+NAAAAAY87NAAA=" />
      </m:ItemIds>
    </m:ExportItems>
  </soap:Body>
</soap:Envelope>
```

The following example shows an **ExportItems** response to the request to export three items. The item identifier and data have been shortened to preserve readability.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <t:ServerVersionInfo MajorVersion="14"
      MinorVersion="1"
      MajorBuildNumber="139"
      MinorBuildNumber="0"
      Version="Exchange2010_SP1"
      xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
      xmlns="http://schemas.microsoft.com/exchange/services/2006/types"
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xmlns:xsd="http://www.w3.org/2001/XMLSchema"/>
  </s:Header>
  <s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <m:ExportItemsResponse
      xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
      xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types">
      <m:ResponseMessages>
        <m:ExportItemsResponseMessage ResponseClass="Success">
          <m:ResponseCode>NoError</m:ResponseCode>
          <m:ItemId Id="AAMkAGYzZjZmRiUsidkC+NAAAAAY89GAAA=" ChangeKey="FwAAAA==" />
          <m:Data>AQAAAAGAAAAAALgBlAHgAdABlAHMAAdAAuAG0AaQBjAHIAbwBzAG8AZgB0AC4A
            YwBvAG0AAABTAE0AVABQAAAAVQBzAGUAcgAyAEAAAYQB1AGoAaQBuAGcALQBkAG8AbQAUAGUA
            eAB0AGUAcwB0AC4AbQBpAGMAcGvBvAHMAbwBmAHQALgBjAG8AbQAAALCE/jlMAAAAVQBzAGUA
            cgAyAEAAAYQB1AGoAaQBuAGcALQBkAG8AbQAUAGUAEAB0AGUAcwB0AC4AbQBpAGMAcGvBvAHMA
```

```
bwBmAHQALgBjAG8AbQAAAAAMAADkAAAAAAwD+DwYAAAADAARAaAwACQAMADka=</m:Data>
</m:ExportItemsResponseMessage>
<m:ExportItemsResponseMessage ResponseClass="Success">
  <m:ResponseCode>NoError</m:ResponseCode>
  <m:ItemId Id="AAMkAGYzZjZmRiUsidkC+NAAAAAY89FAAA=" ChangeKey="FwAAAA==" />
  <m:Data>AQAAAAgAAAAAAAAAAQAAAAAMAAAAAYAAAAQAAAAcDagAAAAAAwAAAAAAAEYAJACA
  QAAyAAAh9Spr08oBAwAEQAMAFkANABMOAwAAQAMAIQ4AAAAAsIQSN0oAAAAyAGEAYGAXADYA
  MQA2ADYALQBhAGUANQBkAC0ANAAyAGUAZgAtAGEANQA1ADkALQBjADgAOQAwADgANwBkADIA
  MwBkADgANAAAAAMACzf/////AwAgDmQEAAADAPcPAAAAAEABzBPMXstUdPKAUAAACDBPMXst
  UdPKAQMBTcFAAAAAsIQONx4AAABtAGUAcwBzAGEAZwBlAC8AcgBmAGMAOAAyADIAAACwhAEW
  IgAAAE0AbwBzAHQAIABmAGEAcwBjAGkAbgBhAHQAaQBwAGcAAAAACAFkPBAAAAAADAADAFA
  FABKZ3QrAAAAZF2mAwXAAEAAACwhBoAegAAAEkAUABNAC4ATgBvAHQAZQAAAAAMNgAAAAAA
  sIQ3ACIAAABNAG8AcwB0ACAAZgBhAHMAYwBpAG4AYQB0AGkAbgBnAAAAQAA5AACq+za80coB
  AgE7AGUAAABFWDovTz1GSVJTVCBPUkdBtk1aQVRJT04vT1U9RVhdSEFOR0UgQURNSU5JU1RS
  QVRJVkUgR1JPVVAgKEZZRE1CT0hGMjNTUERMVcKvQ049UkVDSVBjRlU5Uy9DTj1VU0VST05F
  ALCEPQACAAAAAAACAUeAfgAAAAAAADcp0DIwEIQGrS5CAArL+GCAQAAAAAAAvTz1GSVJTV
  CBPUkdBtk1aQVRJT04vT1U9RVhdSEFOR0UgQURNSU5JU1RSQVRJVkUgR1JPVVAgKEZZRE1C
  T0hGMjNTUERMVcKvQ049UkVDSVBjRlU5Uy9DTj1VU0VST05FALCEQgAQAAAAAVQB</m:Data>
</m:ExportItemsResponseMessage>
<m:ExportItemsResponseMessage ResponseClass="Success">
  <m:ResponseCode>NoError</m:ResponseCode>
  <m:ItemId Id="AAMkAGYzZjZmRiUsidkC+NAAAAAY87NAAA=" ChangeKey="CQAAAA==" />
  <m:Data>AQAAAAgAAAAAAAAAAQAAAAAMAAAAAYAAAAQAAAAcDagAAAAAAwAAAAAAAEYAJACA
  BAAAAyAAAABDouAAAACAAAAEiAAAOSECEBbAAAAAL089Rk1SU1QgT1JHQU5JWkFUSU9OL09V
  PUVYQ0hBTkdFIEFETU1OSVNUUkFUSVZFIEdST1VQIChGWURJQk9IRjIzU1BETfQpL0NOPVJF
  Q01QSUV0VFMvQ049AAMAFwABAAAAAsIQaABIAAABJAFaATQAuAE4AbwB0AGUAAAAALACMAAAAL
  ACkAAADADYAAAAAALCENwAyAAAAASQBwAHQAZQByAGUAcwb0AGkAbgBnACAALQAgAGYAcgBv
  AG0AIABFAFcAUwBNAEEAAABAADkAAHZeFxfRygECATsAZQAAAEVYoi9PPUZJU1NUIE9SR0FO
  SVpBVElPTi9PVT1FWENIQU5HR5BBRE1JTk1TVFJBVE1WRSBHUK9VUCAor11ESUJJPSEYyM1NQ
  REXUKS9DTj1SRUNJUElFTlRtL0NOPVVRVJPTkUAsIQ9AAIAAAAAAIBPwB+AAAAAANyn
  QMjAQhAatLkIACsv4YIBAAAAAACA9PPUZJU1NUIE9SR0FOSVpBVElPTi9PVT1FWENIQU5H
  </m:Data>
</m:ExportItemsResponseMessage>
</m:ResponseMessages>
</m:ExportItemsResponse>
</s:Body>
</s:Envelope>
```

5 Security

5.1 Security Considerations for Implementers

The Bulk Transfer Web Service protocol does not use additional security mechanisms.

5.2 Index of Security Parameters

None.

PRELIMINARY

6 Appendix A: Full WSDL

For ease of implementation, the full WSDLs and schemas are provided in the sections listed in the following table.

WSDL or schema name	Prefix	Section
WSDL	tns, wsdl, t, xs, soap	6.1
Messages	m, t, xs	6.2
Types	t, xs	6.3

The WSDL, messages, and types schema files have to be placed in a common folder in order for the WSDL to validate. Also, any schema files that are included in or imported into the messages and types schemas have to be placed in the common folder with these files.

6.1 WSDL

This section contains the contents of the WSDL file and information about additional files that this WSDL file requires to successfully validate. The following table lists additional files that have to be present in the folder that contains this WSDL.

File name	Section
MS-OXWSBTRF-messages.xsd	Section 6.2

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"

xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"

targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
  <wsdl:types>
    <xs:schema id="messages"
      elementFormDefault="qualified"
      version="Exchange2010_SP1"
      xmlns:xs="http://www.w3.org/2001/XMLSchema"

targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
    <xs:include schemaLocation="MS-OXWSBTRF-messages.xsd"/>
  </xs:schema>
</wsdl:types>
  <wsdl:portType name="ExchangeServicePortType">
    <wsdl:operation name="UploadItems">
      <wsdl:input message="tns:UploadItemsSoapIn"/>
      <wsdl:output message="tns:UploadItemsSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="ExportItems">
      <wsdl:input message="tns:ExportItemsSoapIn"/>
      <wsdl:output message="tns:ExportItemsSoapOut"/>
    </wsdl:operation>
  </wsdl:portType>
  <wsdl:binding name="ExchangeServiceBinding" type="tns:ExchangeServicePortType">
    <wsdl:documentation>
```

```

        <wsdl:documentation>
        </wsdl:documentation>
        <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
        <wsdl:operation name="UploadItems">
            <soap:operation
            soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/UploadItems"/>
            <wsdl:input>
                <soap:header message="tns:UploadItemsSoapIn" part="Impersonation" use="literal"/>
                <soap:header message="tns:UploadItemsSoapIn" part="MailboxCulture"
                use="literal"/>
                <soap:header message="tns:UploadItemsSoapIn" part="RequestVersion"
                use="literal"/>
                <soap:body parts="request" use="literal"/>
            </wsdl:input>
            <wsdl:output>
                <soap:body parts="UploadItemsResult" use="literal"/>
                <soap:header message="tns:UploadItemsSoapOut" part="ServerVersion"
                use="literal"/>
            </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="ExportItems">
            <soap:operation
            soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/ExportItems"/>
            <wsdl:input>
                <soap:header message="tns:ExportItemsSoapIn" part="Impersonation" use="literal"/>
                <soap:header message="tns:ExportItemsSoapIn" part="MailboxCulture"
                use="literal"/>
                <soap:header message="tns:ExportItemsSoapIn" part="RequestVersion"
                use="literal"/>
                <soap:body parts="request" use="literal"/>
            </wsdl:input>
            <wsdl:output>
                <soap:body parts="ExportItemsResult" use="literal"/>
                <soap:header message="tns:ExportItemsSoapOut" part="ServerVersion"
                use="literal"/>
            </wsdl:output>
        </wsdl:operation>
    </wsdl:binding>
    <wsdl:message name="UploadItemsSoapIn">
        <wsdl:part name="request" element="tns:UploadItems"/>
        <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
        <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
        <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
    </wsdl:message>
    <wsdl:message name="UploadItemsSoapOut">
        <wsdl:part name="UploadItemsResult" element="tns:UploadItemsResponse"/>
        <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
    </wsdl:message>
    <wsdl:message name="ExportItemsSoapIn">
        <wsdl:part name="request" element="tns:ExportItems"/>
        <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
        <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
        <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
    </wsdl:message>
    <wsdl:message name="ExportItemsSoapOut">
        <wsdl:part name="ExportItemsResult" element="tns:ExportItemsResponse"/>
        <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
    </wsdl:message>

```

</wsdl:definitions>

6.2 Messages Schema

This section contains the contents of the messages schema and information about additional files that the messages schema file requires to successfully validate. The messages schema is referenced from the WSDL file as MS-OXWSBTRF-messages.xsd. The following table lists additional files that have to be present in the folder that contains the messages schema.

File name	Defining specification
MS-OXWSBTRF-types.xsd	Section 6.3
MS-OXWSCDATA-messages.xsd	[MS-OXWSCDATA] section 6.2

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema id="messages"
  elementFormDefault="qualified"
  version="Exchange2010_SP1"
  xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
  xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"

  targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
  <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
    schemaLocation="MS-OXWSBTRF-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSCDATA-messages.xsd"/>
  <xs:complexType name="UploadItemsType">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="Items" type="t:NonEmptyArrayOfUploadItemsType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="UploadItems" type="m:UploadItemsType"/>
  <xs:complexType name="UploadItemsResponseMessageType">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType">
        <xs:sequence>
          <xs:element name="ItemId" type="t:ItemIdType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:complexType name="UploadItemsResponseType">
    <xs:complexContent>
      <xs:extension base="m:BaseResponseMessageType"/>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="UploadItemsResponse" type="m:UploadItemsResponseType"/>
  <xs:complexType name="ExportItemsType">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="ItemIds"

```

```

        type="t:NonEmptyArrayOfItemIdsType"
        minOccurs="1"
        maxOccurs="1"/>
    </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="ExportItems" type="m:ExportItemsType"/>
<xs:complexType name="ExportItemsResponseMessageType">
    <xs:complexContent>
        <xs:extension base="m:ResponseMessageType">
            <xs:sequence>
                <xs:element name="ItemId" type="t:ItemIdType" minOccurs="0" maxOccurs="1"/>
                <xs:element name="Data" type="xs:base64Binary" minOccurs="0" maxOccurs="1"/>
            </xs:sequence>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
<xs:complexType name="ExportItemsResponseType">
    <xs:complexContent>
        <xs:extension base="m:BaseResponseMessageType"/>
    </xs:complexContent>
</xs:complexType>
<xs:element name="ExportItemsResponse" type="m:ExportItemsResponseType"/>
</xs:schema>

```

6.3 Types Schema

This section contains the contents of the types schema and information about additional files that the types schema file requires to successfully validate. The types schema is referenced from the messages schema file as MS-OXWSBTRF-types.xsd. The following table lists additional files that have to be present in the folder that contains the types schema file.

File name	Defining specification
MS-OXWSCDATA-types.xsd	[MS-OXWSCDATA] section 6.3

```

<?xml version="1.0" encoding="utf-8"?>
<xs:schema id="types"
    elementFormDefault="qualified"
    version="Exchange2010_SP1"
    xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
    targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
    xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:include schemaLocation="MS-OXWSCDATA-types.xsd"/>
    <xs:complexType name="NonEmptyArrayOfUploadItemsType">
        <xs:sequence>
            <xs:element name="Item" type="t:UploadItemType" maxOccurs="unbounded"
                minOccurs="1"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="UploadItemType">
        <xs:sequence>
            <xs:element name="ParentFolderId" type="t:FolderIdType" maxOccurs="1"
                minOccurs="1"/>
            <xs:element name="ItemId" type="t:ItemIdType" maxOccurs="1" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>

```

```
        <xs:element name="Data" type="xs:base64Binary" maxOccurs="1" minOccurs="1"/>
    </xs:sequence>
    <xs:attribute name="CreateAction" type="t:CreateActionType" use="required"/>
</xs:complexType>
<xs:simpleType name="CreateActionType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="CreateNew"/>
        <xs:enumeration value="Update"/>
        <xs:enumeration value="UpdateOrCreate"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="CompleteActionType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Commit"/>
        <xs:enumeration value="Abandon"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="NonEmptyArrayOfItemIdsType">
    <xs:sequence>
        <xs:element name="ItemId" type="t:ItemIdType" maxOccurs="unbounded" minOccurs="1"/>
    </xs:sequence>
</xs:complexType>
</xs:schema>
```

7 Appendix B: Product Behavior

The information in this specification is applicable to the following product versions. References to product versions include released service packs.

- Microsoft® Exchange Server 2010 SP1 Beta

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified.

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

PRELIMINARY

8 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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