

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

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Revision Summary

Date	Revision History	Revision Class	Comments
05/05/2010	0.1.0	Major	Initial Release.
08/04/2010	0.2	Minor	Clarified the meaning of the technical content.
11/03/2010	0.2	No change	No changes to the meaning, language, or formatting of the technical content.
03/18/2011	1.0	Major	Significantly changed the technical content.
08/05/2011	2.0	Major	Significantly changed the technical content.

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1 Introduction

The Bulk Transfer Web Service Protocol enables a protocol client to export and upload streamed opaque item data between the server and the client.

Sections 1.8, 2, and 3 of this specification are normative and contain RFC 2119 language. Section 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 [\[MS-GLOS\]](#):

Hypertext Transfer Protocol (HTTP)
Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)
XML

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

endpoint
mailbox
SOAP action
SOAP body
SOAP header
SOAP message
Web Services Description Language (WSDL)
WSDL message
WSDL port type
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-OXWSCDATA] Microsoft Corporation, "[Common Web Service Data Types](#)".

[MS-OXWSCORE] Microsoft Corporation, "[Core Items Web Service 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>

[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 Language", RFC 3066, 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", 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., 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/>

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

1.2.2 Informative References

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

[MS-OXDCLI] Microsoft Corporation, "[Autodiscover Publishing and Lookup Protocol Specification](#)".

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

[MS-OXWSADISC] Microsoft Corporation, "[Autodiscover Publishing and Lookup SOAP-Based Web Service Protocol Specification](#)".

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.

The upload and export data stream is an opaque format that only need to be understood by a server implementation. The client only serves as a repository for the opaque data stream so that it can be uploaded to the server at a later time.

1.4 Relationship to Other Protocols

A client that implements this protocol can use the Autodiscover Publishing and Lookup SOAP-Based Web Service Protocol, as described in [\[MS-OXWSADISC\]](#), or the Autodiscover Publishing and Lookup Protocol, as described in [\[MS-OXDCLI\]](#), to identify the target **endpoint (4)** to use for each operation.

This protocol uses the SOAP Protocol, as described in [\[SOAP1.1\]](#), to specify the structure information exchanged between the client and server. This protocol uses the **XML** Protocol, as described in [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), to describe the message content sent to and from the server.

The Bulk Transfer Web Service Protocol uses the SOAP protocol, as described in [\[SOAP1.1\]](#), over **HTTPS** which is described in [\[RFC2818\]](#), as shown in the following layering diagram.

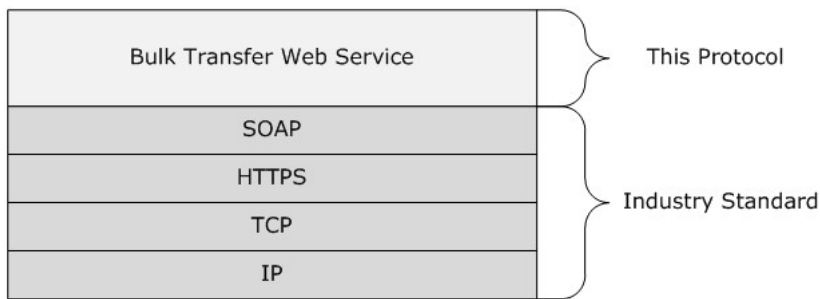


Figure 1: Bulk Transfer Web Service Protocol HTTPS stack

1.5 Prerequisites/Preconditions

The endpoint(4) URL that is returned by either the Autodiscover Publishing Lookup SOAP-Based Web Service Protocol, as described in [\[MS-OXWSADISC\]](#), or the Autodiscover Publishing and Lookup Protocol, as described in [\[MS-OXDSCLI\]](#), is required to form the **HTTP** request to the Web server that hosts this protocol. The operations that this protocol defines cannot be accessed unless the correct endpoint (4) is identified in the HTTP Web requests that target this protocol.

1.6 Applicability Statement

The protocol is applicable to environments that stream items into and out of a mailbox by using Web services. This protocol is intended for backup and restore scenarios where accessing item content is not a requirement. 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. The **WSDL** version of the request is identified by using the **t:RequestServerVersion** element, as described in [\[MS-OXWSCDATA\]](#) section 2.2.4.8, and the version of the server responding to the request is identified by using the **t:ServerVersionInfo** element, as described in [\[MS-OXWSCDATA\]](#) section 2.2.4.9.
- Security and Authentication Methods: This protocol relies on the Web server that is hosting it to perform authentication.
- **Capability Negotiation**: This protocol does not support version negotiation.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

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

This protocol relies on the Web server that hosts the application to perform authentication. The protocol SHOULD use secure communications via HTTPS, as defined in [\[RFC2818\]](#)

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	
none	http://schemas.microsoft.com/exchange/services/2006/types	

2.2.2 Messages

This specification does not define any common **WSDL 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.

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.

The data stream for the **UploadItems** operation is provided by previously exported item data streams provided by **ExportItems** operation.

3.1.4.1 ExportItems

The **ExportItems** operation specifies the WSDL messages for exporting items out of a mailbox.

The following is the WSDL port type definition of the operation.

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

The following is the WSDL binding specification of the 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>
```

3.1.4.1.1 Messages

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

Message	Description
ExportItemsSoapIn (section 3.1.4.1.1.1)	Specifies the SOAP message that represents a request to export items out of a mailbox.
ExportItemsSoapOut (section 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** WSDL message specifies the SOAP message that represents a request to export items out of a mailbox.

The following is the **ExportItemsSoapIn** WSDL message specification.

```
<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** WSDL message is the input message for the **SOAP action** <http://schemas.microsoft.com/exchange/services/2006/messages/ExportItem>.

The parts of the **ExportItemSoapIn** WSDL message are described in the following table.

Part name	Element/type	Description
request	tns:ExportItems (section 3.1.4.1.2.1)	Specifies the SOAP body of the request to export items. This part is required.
Impersonation	t:ExchangeImpersonation ([MS-OXWSCDATA] section 2.2.4.3)	Specifies a SOAP header that identifies the user whom the client application is

Part name	Element/type	Description
		impersonating. This part is optional.
MailboxCulture	t:MailboxCulture ([MS-OXWSCDATA] section 2.2.4.6)	Specifies a SOAP header that identifies the culture to use for accessing the server. The cultures are defined by [RFC3066] .
RequestVersion	t:RequestServerVersion ([MS-OXWSCDATA] section 2.2.4.8)	Specifies a SOAP header that identifies the schema version for the ExportItems operation request.

3.1.4.1.1.2 tns:ExportItemsSoapOut Message

The **ExportItemsSoapOut** WSDL 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 **ExportItemSoapOut** WSDL message is the output message for the SOAP action <http://schemas.microsoft.com/exchange/services/2006/messages/ExportItem>.

The parts of the **ExportItemsSoapOut** WSDL message are described in the following table.

Part name	Element/type	Description
ExportItemsResult	tns:ExportItemsResponse (section 3.1.4.1.2.2)	Specifies the SOAP body of the response.
ServerVersion	ServerVersion ([MS-OXWSCDATA] section 2.2.4.9)	Specifies the SOAP header that identifies the server version for the response.

3.1.4.1.2 Elements

The following table lists 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 request to export 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 lists 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. The **ExportItemsResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [\[MS-OXWSCDATA\]](#) section 2.2.3.52.

```
<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>
```

The following table lists the child elements of the **ExportItemsResponseMessageType** complex type.

Element	Type	Description
ItemId	t:ItemIdType ([MS-OXWSCORE] section 2.2.4.13)	Specifies the item identifier of a single exported item. This element MUST be present if the export operation is successful.
Data	xs:base64Binary ([XMLSCHEMA2])	Specifies the data of a single exported item. This element MUST be present if the export operation is successful.

3.1.4.1.3.2 ExportItemsResponseType Complex Type

The **ExportItemsResponseType** complex types specifies a response to export items from a mailbox. The **ExportItemsResponseType** complex type extends the **BaseResponseMessageType** complex type, as specified in [\[MS-OXWSCDATA\]](#) section 2.2.3.15.

```
<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. The **ExportItemsType** complex type extends the **BaseRequestType** complex type, as specified in [\[MS-OXWSCDATA\]](#) section 2.2.3.14.

```
<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:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists the child elements of the **ExportItemsType** complex type.

Element	Type	Description
ItemIds	t:NonEmptyArrayOfItemIdsType (section 3.1.4.1.3.4)	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>
```

The following table lists the child elements of the **ExportItemsType** complex type.

Element	Type	Description
ItemId	t:ItemIdType (IMS-OXWSCORE section 2.2.4.13)	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 MUST be ignored.

3.1.4.2 UploadItems

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

The following is the WSDL port type definition of the operation.

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

The following is the WSDL binding specification of the operation.

```
<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>
```

3.1.4.2.1 Messages

The following table lists 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** WSDL message specifies the SOAP message that represents a request to upload items into a mailbox.

The following is the WSDL message specification of the **UploadItemsSoapIn** message.

```
<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** WSDL message is the input message for the SOAP action <http://schemas.microsoft.com/exchange/services/2006/messages/UploadItems>.

The parts of the **UploadItemsSoapIn** WSDL message are described in the following table.

Part name	Element/type	Description
request	UploadItems (section 3.1.4.2.2.1)	Specifies the SOAP body of the request.
Impersonation	ExchangeImpersonation ([MS-OXWSCDATA] section 2.2.4.3)	Specifies a SOAP header that identifies the user whom the client application is impersonating. This part is optional.
MailboxCulture	MailboxCulture ([MS-OXWSCDATA] section 2.2.4.6)	Specifies the SOAP header that identifies the culture to use for accessing the server. The cultures are defined by [RFC3066] . This part is optional.
RequestVersion	RequestServerVersion ([MS-OXWSCDATA] section 2.2.4.8)	Specifies a SOAP header that identifies the schema version for the UploadItems operation request.

3.1.4.2.1.2 tns:UploadItemsSoapOut Message

The **UploadItemsSoapOut** WSDL 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** WSDL message is the output message for the SOAP action <http://schemas.microsoft.com/exchange/services/2006/messages/UploadItems>.

The parts of the **UploadItemsSoapOut** WSDL message are described in the following table.

Part name	Element/type	Description
UploadItemsResult	UploadItemsResponse (section 3.1.4.2.2.2)	Specifies the SOAP body of the response to a UploadItems operation request.
ServerVersion	ServerVersion ([MS-OXWSCDATA] section 2.2.4.9)	Specifies the SOAP header that identifies the server version for the response.

3.1.4.2.2 Elements

The following table lists 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.

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 lists 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

Complex type	Description
3.1.4.2.3.2)	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>
```

The following table lists the child elements of the **NonEmptyArrayOfUploadItemsType** complex type.

Element	Type	Description
Item	t:UploadItemType (section 3.1.4.2.3.5)	Specifies the array of items to upload in to a mailbox. At least on 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. The **UploadItemsResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [\[MS-OXWSCDATA\]](#) section 2.2.3.52.

```
<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>
```

The following table lists the child elements of the **UploadItemsResponseMessageType** complex type.

Element	Type	Description
ItemId	t:ItemIdType ([MS-OXWSCORE] section 2.2.4.13)	Specifies the item identifier of an item that was uploaded into a mailbox. Only a single instance of this element can be present.

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. The **UploadItemsResponseType** complex type extends the **BaseResponseMessageType** complex type, as specified in [\[MS-OXWSCDATA\]](#) section 2.2.3.15.

```
<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. The **UploadItemsType** complex type extends the **BaseRequestType** complex type, as specified in [\[MS-OXWSCDATA\]](#) section 2.2.3.14.

```
<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>
```

The following table lists the child elements of the **UploadItemsType** complex type.

Element	Type	Description
Items	t:NonEmptyArrayOfUploadItemsType (section 3.1.4.2.3.1)	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:attribute name="IsAssociated"
    type="xs:boolean"
  />
</xs:complexType>
```

The following table lists the child elements of the **UploadItemType** complex type.

Element	Type	Description
ParentFolderId	t:FolderIdType ([MS-OXWSCDATA] section 2.2.3.29)	Specifies the target folder in which to place the upload item. This element MUST be present.
ItemId	t:ItemIdType ([MS-OXWSCORE] section 2.2.4.13)	Specifies the item identifier of the upload item.
Data	xs:base64Binary ([XMLSCHEMA2])	Specifies the data of the upload item. This element MUST be present.

The following table lists the attributes of the **UploadItemType** complex type.

Name	Type	Description
CreateAction	t:CreateActionType (section 3.1.4.2.4.1)	Specifies the action for uploading items into a mailbox. This attribute MUST be present.
IsAssociated	xs:Boolean ([XMLSCHEMA2])	Specifies whether the item is a folder associated item. This element is optional but MUST be present to specify that an item is a folder associated item. If this element is not present, the server MUST assume that the item is not a folder associated item. The xs:boolean type is specified in

Name	Type	Description
		[XMLSCHEMA2] .

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>
```

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

Value	Description
	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>AQAAAAgAAAAAAAAALgBlAHgAdABlAHMAAdAAuAG0AaQBjAHIAbwBzAG8AZgB0AC4A
            YwBvAG0AAABTAE0AVABQAAAAVQBzAGUAcgAyAEAAyQB1AGoAaQBuAGcALQBkAG8AbQAUAGUA
            eAB0AGUAcwB0AC4AbQBpAGMAcGvBvAHMAbwBmAHQALgBjAG8AbQAAALCE/jlMAAAAVQBzAGUA
            cgAyAEAAyQB1AGoAaQBuAGcALQBkAG8AbQAUAGUAEAB0AGUAcwB0AC4AbQBpAGMAcGvBvAHMA
```

```
bwBmAHQALgBjAG8AbQAAAAAMAADkAAAAAAwD+DwYAAAAADAAAAwACQAMADkA=</m:Data>
</m:ExportItemsResponseMessage>
<m:ExportItemsResponseMessage ResponseClass="Success">
  <m:ResponseCode>NoError</m:ResponseCode>
  <m:ItemId Id="AAMkAGYzZjZmRiUsidk+NAAAAAY89FAAA=" ChangeKey="FwAAAA==" />
  <m:Data>AQAAAAgAAAAAAAAAAQAAAAAMAAAAAYAAAAQAAAAcDagAAAAAAwAAAAAAAEYAJACA
  QAAyAAAh9Spr08oBAwAEQAMAFkANABMOAwAAQAMAIQ4AAAAAsIQSN0oAAAAyAGEAYgAxADYA
  MQA2ADYALQBhAGUANQBkAC0ANAAyAGUAZgAtAGEANQA1ADkALQBjADgAOQAwADgANwBkADIA
  MwBkADgANAAAAAMACzf/////AwAgDmQEAAADAPcPAAAAEEAABzBPMXstUdPKAUAAACDBPMXst
  UdPKAQMBTcFAAAAAsIQONx4AAABtAGUAcwBzAGEAZwBlAC8AcgBmAGMAOAAyADIAAACwhAEW
  IgAAAE0AbwBzAHQAIABmAGEAcwBjAGkAbgBhAHQAaQBuaAGcAAAAACafkPBAAAAAADAFAFA
  FABKZ3QrAAAAZF2mAwXAAEAAACwhBoAEgAAAEkAUABNAC4ATgBvAHQAZQAAAAAMNgAAAAAA
  sIQ3ACIAAABNAG8AcwB0ACAAZgBhAHMAYwBpAG4AYQB0AGkAbgBnAAAAQAA5AACq+za80coB
  AgE7AGUAAABFWDovTz1GSVJTVCBPUkdBTk1aQVRJT04vT1U9RVhdSEFOR0UgQURNSU5JU1RS
  QVRJVkUgR1JPVVAgKEZZRE1CT0hGMjNTUERMVckvQ049UkVDSVBjRU5UUY9DTj1VU0VST05F
  ALCEPQACAAAAAAACAUeAfgAAAAAAADcp0DIwEIQGrS5CAArL+GCAQAAAAAAAvTz1GSVJTV
  CBUkdBTk1aQVRJT04vT1U9RVhdSEFOR0UgQURNSU5JU1RSQVRJVkUgR1JPVVAgKEZZRE1C
  T0hGMjNTUERMVckvQ049UkVDSVBjRU5UUY9DTj1VU0VST05FALCEQgAQAAAAVQB</m:Data>
</m:ExportItemsResponseMessage>
<m:ExportItemsResponseMessage ResponseClass="Success">
  <m:ResponseCode>NoError</m:ResponseCode>
  <m:ItemId Id="AAMkAGYzZjZmRiUsidk+NAAAAAY87NAAA=" ChangeKey="CQAAAA==" />
  <m:Data>AQAAAAgAAAAAAAAAAQAAAAAMAAAAAYAAAAQAAAAcDagAAAAAAwAAAAAAAEYAJACA
  BAAAAAYAAABDouAAAACAAAAEiAAAOSECEBbAAAAAL089RklSU1QgTlJHQU5JWkFUSU9OL09V
  PUVYQ0hBTkdFIEFETU1OSVNUUkFUSVZFIEdst1VQIChGWURJQk9IRjIzU1BETFQpL0NOPVJF
  Q01QSUVVFMvQ049AAMAFwABAAAAAsIQaABIAAABJAFaATQAUAE4AbwB0AGUAAAAALACMAAAAL
  ACkAAADADYAAAAAALCENwAyAAAAASQBUAHQAZQByAGUAcwB0AGkAbgBnACAALQAgAGYAcgBv
  AG0AIABFafCAUwBNAEEAAABAADkAAHZeFxfRygeCATsAZQAAAEVYoi9PPUZJULNUIE9SR0FO
  SVpBVElPtI9PVT1FWENIQU5HRsBBRE1JTk1TVFJBVElWRSBHUk9VUCaoR11ESUJpSEYyM1NQ
  REXUKS9DTj1SRUNJUElFTlRtL0NOPVVTRVJPTkUAsIQ9AAIAAAAAAIBPwB+AAAAAANyn
  QMjAQhAatLkIACsv4YIBAAAAAACA9PPUZJULNUIE9SR0FOSVpBVElPtI9PVT1FWENIQU5H
  </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.

6 Appendix A: Full WSDL

The XML files that are listed in the following table are required in order to implement the functionality described in this document.

File name	Description	Section
MS-OXWSBTRF.wsdl	Contains the WSDL for the implementation of this protocol.	6
MS-OXWSBTRF-messages.xsd	Contains the XML schema message definitions that are used in this protocol.	7.1
MS-OXWSBTRF-types.xsd	Contains the XML schema type definitions that are used in this protocol.	7.2

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSBTRF-types.xsd or MS-OXWSBTRF-messages.xsd schemas have to be placed in the common folder along with the files listed in the table.

This section contains the contents of the MS-OXWSBTRF.wsdl file.

```
<?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>
      <wsi:Claim conformsTo="http://ws-i.org/profiles/basic/1.0"
        xmlns:wsi="http://ws-i.org/schemas/conformanceClaim"/>
    </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>

```

7 Appendix B: Full XML Schema

For ease of implementation, the following sections provide the full XML schema for this protocol.

Schema name	Prefix	Section
Messages schema	m:	7.1
Types schema	t:	7.2

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSBTRF-types.xsd or MS-OXWSBTRF-messages.xsd schemas have to be placed in the common folder along with the files listed in the table

7.1 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	7.2
MS-OXWSCDATA-messages.xsd	[MS-OXWSCDATA] section 7.1

```
<?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: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>

```

7.2 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 7.2

```

<?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:element name="Data" type="xs:base64Binary" maxOccurs="1" minOccurs="1"/>
    </xs:sequence>
    <xs:attribute name="CreateAction" type="t:CreateActionType" use="required"/>
    <xs:attribute name="IsAssociated" type="xs:boolean" use="optional"/>
  </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>

```

8 Appendix C: 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 Service Pack 1 (SP1)

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.

9 Change Tracking

This section identifies changes that were made to the [MS-OXWSBTRF] 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.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1 Introduction	Updated the introduction.	N	Content updated.
1.2.2 Informative References	Updated the Overview section with more general information about the protocol.	N	Content updated.
1.4 Relationship to Other Protocols	Added content to the Relationship to Other Protocols section.	Y	Content updated.
1.5 Prerequisites/Preconditions	Added content to the Prerequisites/Preconditions section.	Y	Content updated.
1.6 Applicability Statement	Added additional applicability statement.	N	Content updated.
1.7 Versioning and Capability Negotiation	Updated the content of the Versioning and Capability Negotiation section.	N	Content updated.
2.1 Transport	Added content to the transport section.	N	Content updated.
2.2.1 Namespaces	Added glossary terms.	N	Content updated.
2.2.2 Messages	Added glossary terms.	N	Content updated.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
2.2.3 Elements	Added glossary terms.	N	Content updated.
2.2.4 Complex Types	Added glossary terms.	N	Content updated.
3.1.4 Message Processing Events and Sequencing Rules	Added sequencing information.	N	Content updated.
3.1.4.1 ExportItems	Added the WSDL binding specification.	Y	Content updated.
3.1.4.1.1 Messages	Added glossary term.	N	Content updated.
3.1.4.1.1.1 tns:ExportItemsSoapIn Message	Added glossary terms and SOAP action.	N	Content updated.
3.1.4.1.1.2 tns:ExportItemsSoapOut Message	Added glossary terms and SOAP action.	N	Content updated.
3.1.4.1.2.1 ExportItems Element	Updated the content.	N	Content updated.
3.1.4.1.3 Complex Types	Added glossary term.	N	Content updated.
3.1.4.1.3.1 m:ExportItemsResponseMessageType Complex Type	Updated the content and added reference to extended base type.	N	Content updated.
3.1.4.1.3.2 ExportItemsResponseType Complex Type	Added reference to extended base type.	N	Content updated.
3.1.4.1.3.3 ExportItemsType Complex Type	Added reference to extended base type.	N	Content updated.
3.1.4.2 UploadItems	Updated the UploadItems section with the WSDL binding specification.	Y	Content updated.
3.1.4.2.1 Messages	Updated the content.	N	Content updated.
3.1.4.2.1.1 tns:UploadItemsSoapIn Message	Added additional information for the UploadItemsSoapIn message.	N	Content updated.
3.1.4.2.1.2 tns:UploadItemsSoapOut Message	Added additional information for the UploadItemsSoapIn message.	N	Content updated.
3.1.4.2.3.1 t:NonEmptyArrayOfUploadItemsType	Updated the content.	N	Content updated.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
Complex Type			
3.1.4.2.3.3 m:UploadItemsResponseType Complex Type	Updated the content with reference to extended base type.	N	Content updated.
3.1.4.2.3.4 m:UploadItemsType Complex Type	Updated the content with reference to extended base type.	N	Content updated.
3.1.4.2.3.5 m:UploadItemType Complex Type	Updated the content.	N	Content updated.
6 Appendix A: Full WSDL	Moved WSDL content from section 6.1 to this section.	N	Content updated for template compliance.
7 Appendix B: Full XML Schema	Added new section and moved content from section 6.2 to this section.	N	New content added for template compliance.
7.1 Messages Schema	Added new section and moved content from section 6.2 to this section.	N	New content added for template compliance.
7.2 Types Schema	Added new section and moved content from section 6.3 to this section.	N	New content added for template compliance.
	Removed sections 6.1, 6.2, and 6.3.	N	Content removed for template compliance.

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