

[MS-OXWSCONT]: Contacts Web Service Protocol

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft [Open Specification Promise](#) or the [Community Promise](#). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights. For a list of Microsoft trademarks, visit www.microsoft.com/trademarks.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications do not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments you are free to take advantage of them. Certain Open Specifications are intended for use in conjunction with publicly available standard specifications and network programming art, and assumes that the reader either is familiar with the aforementioned material or has immediate access to it.

Revision Summary

Date	Revision History	Revision Class	Comments
07/15/2009	1.0	Major	Initial Availability.
11/04/2009	1.1.0	Minor	Updated the technical content.
02/10/2010	2.0.0	Major	Updated and revised the technical content.
05/05/2010	2.0.1	Editorial	Revised and edited the technical content.
08/04/2010	3.0	Major	Significantly changed the technical content.
11/03/2010	3.0	No change	No changes to the meaning, language, or formatting of the technical content.
03/18/2011	3.0	No change	No changes to the meaning, language, and formatting of the technical content.
08/05/2011	3.1	Minor	Clarified the meaning of the technical content.
10/07/2011	3.1	No change	No changes to the meaning, language, or formatting of the technical content.
01/20/2012	4.0	Major	Significantly changed the technical content.
04/27/2012	4.0	No change	No changes to the meaning, language, or formatting of the technical content.
07/16/2012	4.1	Minor	Clarified the meaning of the technical content.
10/08/2012	4.2	Minor	Clarified the meaning of the technical content.
02/11/2013	5.0	Major	Significantly changed the technical content.
07/26/2013	6.0	Major	Significantly changed the technical content.

Table of Contents

1 Introduction	5
1.1 Glossary	5
1.2 References	5
1.2.1 Normative References	5
1.2.2 Informative References	6
1.3 Overview	6
1.4 Relationship to Other Protocols	7
1.5 Prerequisites/Preconditions	7
1.6 Applicability Statement	7
1.7 Versioning and Capability Negotiation	7
1.8 Vendor-Extensible Fields	7
1.9 Standards Assignments	7
2 Messages	8
2.1 Transport	8
2.2 Common Message Syntax	8
2.2.1 Namespaces	8
2.2.2 Messages	8
2.2.3 Elements	8
2.2.4 Complex Types	8
2.2.4.1 t:ArrayOfBinaryType Complex Type	9
2.2.4.2 t:ContactItemType Complex Type	9
2.2.5 Simple Types	14
2.2.5.1 t:ContactSourceType Simple Type	14
2.2.6 Attributes	15
2.2.7 Groups	15
2.2.8 Attribute Groups	15
3 Protocol Details	16
3.1 ExchangeServicePortType Server Details	16
3.1.1 Abstract Data Model	16
3.1.2 Timers	16
3.1.3 Initialization	16
3.1.4 Message Processing Events and Sequencing Rules	16
3.1.4.1 GetItem	16
3.1.4.1.1 Complex Types	17
3.1.4.1.1.1 t:CompleteNameType Complex Type	17
3.1.4.1.1.2 t:ContactsFolderType Complex Type	18
3.1.4.1.1.3 t:ContactsViewType Complex Type	19
3.1.4.1.1.4 t:EmailAddressDictionaryEntryType Complex Type	20
3.1.4.1.1.5 t:EmailAddressDictionaryType Complex Type	21
3.1.4.1.1.6 t:ImAddressDictionaryEntryType Complex Type	21
3.1.4.1.1.7 t:ImAddressDictionaryType Complex Type	21
3.1.4.1.1.8 t:PhoneNumberDictionaryEntryType Complex Type	22
3.1.4.1.1.9 t:PhoneNumberDictionaryType Complex Type	22
3.1.4.1.1.10 t:PhysicalAddressDictionaryEntryType Complex Type	23
3.1.4.1.1.11 t:PhysicalAddressDictionaryType Complex Type	24
3.1.4.1.2 Simple Types	24
3.1.4.1.2.1 t:EmailAddressKeyType Simple Type	24
3.1.4.1.2.2 t:FileAsMappingType Simple Type	25

3.1.4.1.2.3	t:ImAddressKeyType Simple Type	27
3.1.4.1.2.4	t:PhoneNumberKeyType Simple Type.....	28
3.1.4.1.2.5	t:PhysicalAddressIndexType Simple Type	30
3.1.4.1.2.6	t:PhysicalAddressKeyType Simple Type	30
3.1.4.2	DeleteItem	31
3.1.4.3	UpdateItem	32
3.1.4.4	MoveItem	32
3.1.4.5	CopyItem	33
3.1.4.6	CreateItem	33
3.1.5	Timer Events	34
3.1.6	Other Local Events	34
4	Protocol Examples.....	35
5	Security.....	36
5.1	Security Considerations for Implementers.....	36
5.2	Index of Security Parameters	36
6	Appendix A: Full WSDL.....	37
7	Appendix B: Full XML Schema	42
8	Appendix C: Product Behavior	47
9	Change Tracking.....	48
10	Index	51

1 Introduction

This document specifies the Contacts Web Service protocol.

Sections 1.8, 2, and 3 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in RFC 2119. Sections 1.5 and 1.9 are also normative but cannot contain those terms. All other sections and examples in this specification are informative.

1.1 Glossary

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

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

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

base64 encoding
contact
distribution list
mailbox
message store
permission
S/MIME (Secure/Multipurpose Internet Mail Extensions)
Simple Mail Transfer Protocol (SMTP)
Uniform Resource Identifier (URI)
web server
Web Services Description Language (WSDL)
WSDL message
WSDL port type
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

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

1.2.1 Normative References

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

<http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

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

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

[MS-OXWSDLIST] Microsoft Corporation, "[Distribution List Creation and Usage Web Service Protocol](#)".

[MS-OXWSFOLD] Microsoft Corporation, "[Folders and Folder Permissions Web Service Protocol](#)".

[MS-OXWSRSLNM] Microsoft Corporation, "[Resolve Recipient Names Web Service Protocol](#)".

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

[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>

[WSIBASIC] Ballinger, K., Ehnebuske, D., Gudgin, M., et al., Eds., "Basic Profile Version 1.0", Final Material, April 2004, <http://www.ws-i.org/Profiles/BasicProfile-1.0-2004-04-16.html>

[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., Beech, D., Maloney, M., Eds., 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., 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

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

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

[MS-OXPROTO] Microsoft Corporation, "[Exchange Server Protocols System Overview](#)".

[RFC2616] Fielding, R., Gettys, J., Mogul, J., et al., "Hypertext Transfer Protocol -- HTTP/1.1", RFC 2616, June 1999, <http://www.ietf.org/rfc/rfc2616.txt>

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

1.3 Overview

The Contacts Web Service protocol provides the messages needed to create, get, update, delete, move, and copy **contact** items on the server.

1.4 Relationship to Other Protocols

This protocol uses **SOAP** over **HTTP**, as described in [\[RFC2616\]](#), and SOAP over **HTTPS**, as described in [\[RFC2818\]](#), as shown in the following layering diagram.

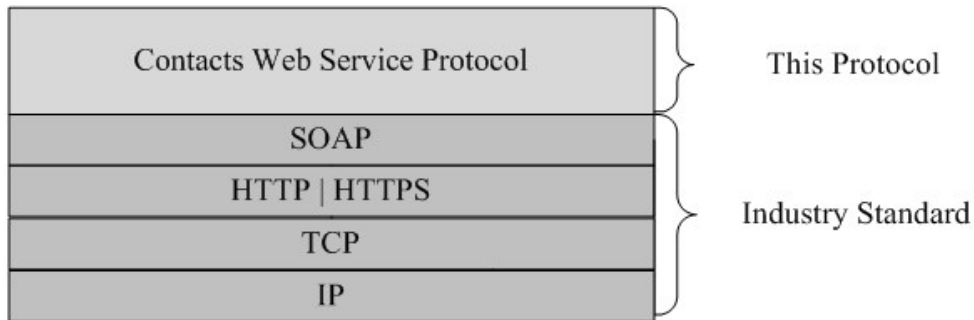


Figure 1: This protocol in relation to other protocols

For conceptual background information and overviews of the relationships and interactions between this and other protocols, see [\[MS-OXPROTO\]](#).

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

This protocol is applicable to client programs that create, update, or manage contact items in the server **message store**.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol uses SOAP 1.1. For more information, see 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.
- **Localization:** This protocol uses the **MailboxCulture** part, as described in [\[MS-OXWSCORE\]](#) section 3.1.4.1.1.1, to specify the culture of a **mailbox**, and elements that are of the **xs:dateTime** type, as described in section [2.2.4.2](#).
- **Capability Negotiation:** None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The **WSDL** in this specification provides a base description of the protocol. The schema in this specification provides a base description of the message syntax. The text that specifies the WSDL and schema might specify restrictions that reflect actual protocol behavior. For example, the schema definition might allow for an element to be **empty**, **null**, or **not present** but the behavior of the protocol as specified restricts the same elements to being **non-empty**, **not null**, or **present**.

2.1 Transport

The SOAP version supported is SOAP 1.1, as specified in [\[SOAP1.1\]](#).

2.2 Common Message Syntax

This section contains common definitions that are 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** 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	
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA2]
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
t	http://schemas.microsoft.com/exchange/services/2006/types	
wsi	http://ws-i.org/schemas/conformanceClaim/	[WSIBASIC]

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

The following table summarizes the set of common XML schema complex type definitions that are defined by this specification. XML schema complex type definitions that are specific to a particular operation are defined with the operation.

Complex type	Description
t:ArrayOfBinaryType (section 2.2.4.1)	Specifies a collection of certificates for a contact.
t:ContactItemType (section 2.2.4.2)	Represents a server contact item.

2.2.4.1 t:ArrayOfBinaryType Complex Type

The **ArrayOfBinaryType** complex type specifies a collection of certificates for a contact. [<1>](#)

```
<xs:complexType name="ArrayOfBinaryType">
  <xs:sequence>
    <xs:element name="Base64Binary" type="xs:base64Binary" minOccurs="0"
maxOccurs="unbounded" />
  </xs:sequence>
</xs:complexType>
```

Child element

Element name	Type	Description
Base64Binary	xs:base64Binary [XMLSCHEMA2]	Specifies a single certificate for a contact. The value is encoded with base64 encoding .

2.2.4.2 t:ContactItemType Complex Type

The **ContactItemType** complex type represents a server contact item. It is also used by the **ResolveNames** method ([\[MS-OXWSRSLNM\]](#) section 3.1.4.1), returning directory and store contacts matching a search string.

```
<xs:complexType name="t:ContactItemType">
  <xs:complexContent>
    <xs:extension
      base="t:ItemType"
    >
    <xs:sequence>
      <xs:element name="FileAs"
        type="xs:string"
        minOccurs="0"
      />
      <xs:element name="FileAsMapping"
        type="t:FileAsMappingType"
      />
      <xs:element name="DisplayName"
        type="xs:string"
      />
      <xs:element name="GivenName"
        type="xs:string"
      />
      <xs:element name="Initials"
        type="xs:string"
      />
      <xs:element name="MiddleName"
        type="xs:string"
      />
    </xs:sequence>
  </xs:complexContent>
</xs:complexType>
```

```
</>
<xs:element name="Nickname"
  type="xs:string"
  />
<xs:element name="CompleteName"
  type="t:CompleteNameType"
  />
<xs:element name="CompanyName"
  type="xs:string"
  />
<xs:element name="EmailAddresses"
  type="t:EmailAddressDictionaryType"
  />
<xs:element name="PhysicalAddresses"
  type="t:PhysicalAddressDictionaryType"
  />
<xs:element name="PhoneNumbers"
  type="t:PhoneNumberDictionaryType"
  />
<xs:element name="AssistantName"
  type="xs:string"
  />
<xs:element name="Birthday"
  type="xs:dateTime"
  />
<xs:element name="BusinessHomePage"
  type="xs:anyURI"
  />
<xs:element name="Children"
  type="t:ArrayOfStringsType"
  />
<xs:element name="Companies"
  type="t:ArrayOfStringsType"
  />
<xs:element name="ContactSource"
  type="t:ContactSourceType"
  />
<xs:element name="Department"
  type="xs:string"
  />
<xs:element name="Generation"
  type="xs:string"
  />
<xs:element name="ImAddresses"
  type="t:ImAddressDictionaryType"
  />
<xs:element name="JobTitle"
  type="xs:string"
  />
<xs:element name="Manager"
  type="xs:string"
  />
<xs:element name="Mileage"
  type="xs:string"
  />
<xs:element name="OfficeLocation"
  type="xs:string"
  />
<xs:element name="PostalAddressIndex"
```

```

        type="t:PhysicalAddressIndexType"
    />
<xs:element name="Profession"
    type="xs:string"
    />
<xs:element name="SpouseName"
    type="xs:string"
    />
<xs:element name="Surname"
    type="xs:string"
    />
<xs:element name="WeddingAnniversary"
    type="xs:dateTime"
    />
<xs:element name="HasPicture"
    type="xs:boolean"
    />
<xs:element name="PhoneticFullName"
    type="xs:string"
    minOccurs="0"
    />
<xs:element name="PhoneticFirstName"
    type="xs:string"
    minOccurs="0"
    />
<xs:element name="PhoneticLastName"
    type="xs:string"
    minOccurs="0"
    />
<xs:element name="Alias"
    type="xs:string"
    minOccurs="0"
    />
<xs:element name="Notes"
    type="xs:string"
    minOccurs="0"
    />
<xs:element name="Photo"
    type="xs:base64Binary"
    minOccurs="0"
    />
<xs:element name="UserSMIMECertificate"
    type="t:ArrayOfBinaryType"
    minOccurs="0"
    />
<xs:element name="MSEExchangeCertificate"
    type="t:ArrayOfBinaryType"
    minOccurs="0"
    />
<xs:element name="DirectoryId"
    type="xs:string"
    minOccurs="0"
    />
<xs:element name="ManagerMailbox"
    type="t:SingleRecipientType"
    minOccurs="0"
    />
<xs:element name="DirectReports"
    type="t:ArrayOfRecipientsType"

```

```

        minOccurs="0"
    />
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

Child Elements<2>

Element name	Type	Description
FileAs	xs:string [XMLSCHEMA2]	Represents how a contact is filed in the Contacts folder.
FileAsMapping	t:FileAsMappingType (section 3.1.4.1.2.2)	Defines how to construct what is displayed for a contact.
DisplayName	xs:string	Contains the display name of a contact.
GivenName	xs:string	Contains the given name for a contact.
Initials	xs:string	Contains the initials for a contact.
MiddleName	xs:string	Represents the middle name of a contact.
Nickname	xs:string	Represents the nickname of a contact.
CompleteName	t:CompleteNameType (section 3.1.4.1.1.1)	Represents the complete name of a contact.
CompanyName	xs:string	Contains the company name that is associated with a contact.
EmailAddresses	t:EmailAddressDictionaryType (section 3.1.4.1.1.5)	Contains e-mail addresses that are associated with a contact.
PhysicalAddresses	t:PhysicalAddressDictionaryType (section 3.1.4.1.1.11)	Represents a collection of physical addresses that are associated with a contact.
PhoneNumbers	t:PhoneNumberDictionaryType (section 3.1.4.1.1.9)	Represents a collection of telephone numbers for a contact.
AssistantName	xs:string	Contains the name of the assistant for the contact.
Birthday	xs:dateTime [XMLSCHEMA2]	Represents the birthday of the contact.
BusinessHomePage	xs:anyURI [XMLSCHEMA2]	Contains the business home page Uniform Resource Identifier (URI) of a contact.
Children	t:ArrayOfStringsType ([MS-OXWSCDATA] section 2.2.4.11)	Contains the names of children for the contact.

Element name	Type	Description
Companies	t:ArrayOfStringsType	Contains the names of companies that are associated with a contact.
ContactSource	t:ContactSourceType (section 2.2.5.1)	Describes whether the contact is located in the server message store or the directory service.
Department	xs:string	Contains the work department for the contact.
Generation	xs:string	Contains a generational abbreviation that follows the full name of a contact.
ImAddresses	t:ImAddressDictionaryType (section 3.1.4.1.1.7)	Contains instant messaging addresses for a contact.
JobTitle	xs:string	Contains the job title of a contact.
Manager	xs:string	Represents the manager of a contact.
Mileage	xs:string	Represents the mileage for a contact.
OfficeLocation	xs:string	Represents the office location of a contact.
PostalAddressIndex	t:PhysicalAddressIndexType (section 3.1.4.1.2.5)	Represents the index of one of the physical addresses, which is a contact's mailing address.
Profession	xs:string	Represents the profession of a contact.
SpouseName	xs:string	Represents the name of the spouse/partner of a contact.
Surname	xs:string	Contains the surname of a contact.
WeddingAnniversary	xs:dateTime	Contains the wedding anniversary date of a contact.
HasPicture	xs:boolean [XMLSCHEMA2]	Represents that the contact has a picture.
PhoneticFullName	xs:string	Contains the full name of a contact, including the first and last name, spelled phonetically.
PhoneticFirstName	xs:string	Contains the first name of a contact, spelled phonetically.
PhoneticLastName	xs:string	Contains the last name of a contact, spelled phonetically.
Alias	xs:string	Contains the email alias of a contact.

Element name	Type	Description
Notes	xs:string	Contains supplementary contact information.
Photo	xs:base64Binary [XMLSCHEMA2]	Contains a value that encodes the photo of a contact.
UserSMIMECertificate	t:ArrayOfBinaryType (section 2.2.4.1)	Contains a value that encodes a contact's S/MIME certificate.
MSEExchangeCertificate	t:ArrayOfBinaryType	Contains a value that encodes the server certificate of a contact.
DirectoryId	xs:string	Contains the directory identifier of a contact.
ManagerMailbox	t:SingleRecipientType ([MS-OXWSCDATA] section 2.2.4.60)	Contains SMTP information that identifies the mailbox of a contact's manager.
DirectReports	t:ArrayOfRecipientsType ([MS-OXWSCDATA] section 2.2.4.9)	Contains SMTP information that identifies the mailboxes of a contact's direct reports.

2.2.5 Simple Types

The following table summarizes the set of common XML schema simple type definitions defined by this specification. XML schema simple type definitions that are specific to a particular operation are described with the operation.

Simple Type	Description
t:ContactSourceType (section 2.2.5.1)	Specifies whether a contact or distribution list is located in the server database or in the directory service.

2.2.5.1 t:ContactSourceType Simple Type

The **ContactSourceType** specifies whether a contact or distribution list is located in the server database or in the directory service.

```
<xs:simpleType name="ContactSourceType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="ActiveDirectory"
    />
    <xs:enumeration
      value="Store"
    />
  </xs:restriction>
</xs:simpleType>
```

Enumeration

The following values are defined by the **ContactSourceType** simple type.

Value	Meaning
ActiveDirectory	Specifies that the contact or distribution list is located in the directory service.
Store	Specifies that the contact or distribution list is located in the server database.

This is applicable to the Contacts Web Service protocol and to the Distribution List Creation and Usage Web Service protocol [\[MS-OXWSDLIST\]](#).

It is also used by the **ResolveNames** method ([\[MS-OXWSRSLNM\]](#) section 3.1.4.1), returning directory and store contacts matching a search string.

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.

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

This protocol defines a single port type.

3.1.1 Abstract Data Model

This protocol is a stateless protocol.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

This protocol includes the operations listed in the following table.

Operation	Description
CopyItem (section 3.1.4.5)	Defines a request to copy an item in a mailbox in the server.
CreateItem (section 3.1.4.6)	Defines a request to create an item in the server.
DeleteItem (section 3.1.4.2)	Defines a request to delete an item from a mailbox in the server.
GetItem (section 3.1.4.1)	Defines a request to get an item from a mailbox in the server.
MoveItem (section 3.1.4.4)	Defines a request to move an item in the server.
UpdateItem (section 3.1.4.3)	Defines a request to update an item in a mailbox.

3.1.4.1 GetItem

This protocol uses the **GetItem** operation specified in [\[MS-OXWSCORE\]](#) section 3.1.4.4 to get contact item elements.

```
<wsdl:operation name="GetItem">
  <wsdl:input message="tns:GetItemSoapIn" />
  <wsdl:output message="tns:GetItemSoapOut" />
</wsdl:operation>
```

Request

Message Format	Description
tns:GetItemSoapIn ([MS-OXWSCORE] section 3.1.4.4.1.1)	Specifies the SOAP message that defines the contact item to get. The Items ([MS-OXWSCDATA] section 2.2.4.42) child element of the GetItem ([MS-OXWSCORE] section 3.1.4.4.2.1) child element that specifies the XML request MUST contain the following elements: t:ItemResponseShapeType ([MS-OXWSCDATA] section 2.2.4.38), t:ItemIdType ([MS-OXWSCORE] section 2.2.4.19). All other elements MUST be empty.

Response

Message Format	Description
tns:GetItemSoapOut ([MS-OXWSCORE] section 3.1.4.4.1.2)	Specifies the SOAP message returned by the server in response. The server returns a t:ItemResponseShapeType ([MS-OXWSCDATA] section 2.2.4.38) element that contains properties associated with the distribution list item.

3.1.4.1.1 Complex Types

The following XML schema complex type definitions are specific to this operation.

3.1.4.1.1.1 t:CompleteNameType Complex Type

The **CompleteNameType** complex type represents the complete name of a contact.

```
<xs:complexType name="CompleteNameType">
  <xs:sequence>
    <xs:element name="Title"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="FirstName"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="MiddleName"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="LastName"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="Suffix"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="Initials"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="FullName"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="Nickname"

```

```

        type="xs:string"
        minOccurs="0"
      />
      <xs:element name="YomiFirstName"
        type="xs:string"
        minOccurs="0"
      />
      <xs:element name="YomiLastName"
        type="xs:string"
        minOccurs="0"
      />
    </xs:sequence>
  </xs:complexType>

```

Child Elements

Element name	Type	Description
Title	xs:string [XMLSCHEMA2]	Contains the title of a contact.
FirstName	xs:string	Contains the first name of a contact. This is the same as GivenName.
MiddleName	xs:string	Contains the middle name of a contact.
LastName	xs:string	Contains the last name of a contact. This is the same as the Surname.
Suffix	xs:string	Contains a suffix to a contact's name. This is the same as the Generation property.
Initials	xs:string	Contains the initials of a contact.
FullName	xs:string	Contains the full name of a contact.
Nickname	xs:string	Contains the nickname of a contact.
YomiFirstName	xs:string	Contains the name used in Japan for the searchable or phonetic spelling of a Japanese first name.
YomiLastName	xs:string	Contains the name used in Japan for the searchable or phonetic spelling of a Japanese last name.

3.1.4.1.1.2 t:ContactsFolderType Complex Type

The **ContactsFolderType** complex type represents a Contacts folder in a mailbox.

```

<xs:complexType name="ContactsFolderType">
  <xs:complexContent>
    <xs:extension
      base="t:BaseFolderType"
    >
    <xs:sequence>
      <xs:element name="SharingEffectiveRights"

```

```

        type="t:PermissionReadAccessType"
        minOccurs="0"
      />
    <xs:element name="PermissionSet"
      type="t:PermissionSetType"
      minOccurs="0"
    />
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

Child Elements

Element name	Type	Description
SharingEffectiveRights	t:PermissionReadAccessType ([MS-OXWSFOLD] section 2.2.5.4)	Specifies whether a user has permission to read items in a folder.
PermissionSet	t:PermissionSetType ([MS-OXWSFOLD] section 2.2.4.12)	Contains all the permissions that are configured for a folder.

3.1.4.1.1.3 t:ContactsViewType Complex Type

The **ContactsViewType** complex type represents the settings that are used to return contact items based on their alphabetical display names.

```

<xs:complexType name="ContactsViewType">
  <xs:complexContent>
    <xs:extension
      base="t:BasePagingType"
    >
      <xs:attribute name="InitialName"
        type="xs:string"
        use="optional"
      />
      <xs:attribute name="FinalName"
        type="xs:string"
        use="optional"
      />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

Attributes

Attribute name	Type	Description
InitialName	xs:string [XMLSCHEMA2]	Contains the first name in a contacts list to return in a response.

Attribute name	Type	Description
FinalName	xs:string	Contains the last name in a contacts list to return in a response.

3.1.4.1.1.4 t:EmailAddressDictionaryEntryType Complex Type

The **EmailAddressDictionaryEntryType** complex type represents an e-mail address that is associated with a contact.

```
<xs:complexType name="EmailAddressDictionaryEntryType">
  <xs:simpleContent>
    <xs:extension
      base="xs:string"
    >
      <xs:attribute name="Key"
        type="t:EmailAddressKeyType"
        use="required"
      />
      <xs:attribute name="Name"
        type="xs:string"
        use="optional"
      />
      <xs:attribute name="RoutingType"
        type="xs:string"
        use="optional"
      />
      <xs:attribute name="MailboxType"
        type="t:MailboxTypeType"
        use="optional"
      />
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

Attributes

Name	Type	Description
Key	t:EmailAddressKeyType (section 3.1.4.1.2.1)	Contains a value that identifies an e-mail address that is associated with a contact.
Name ^{<3>}	xs:string [XMLSCHEMA2]	Contains the display name associated with an e-mail address of the contact.
RoutingType ^{<4>}	xs:string	Contains the routing type associated with an e-mail address of the contact.
MailboxType ^{<5>}	t:MailboxTypeType ([MS-OXWSCDATA] section 2.2.3.18)	Contains the type of mailbox that is represented by the e-mail address of the contact.

3.1.4.1.1.5 t:EmailAddressDictionaryType Complex Type

The **EmailAddressDictionaryType** complex type contains e-mail addresses.

```
<xs:complexType name="EmailAddressDictionaryType">
  <xs:sequence>
    <xs:element name="Entry"
      type="t:EmailAddressDictionaryEntryType"
      maxOccurs="unbounded"
    />
  </xs:sequence>
</xs:complexType>
```

Child Elements

Element name	Type	Description
Entry	t:EmailAddressDictionaryEntryType (section 3.1.4.1.1.4)	Represents an e-mail address that is associated with a contact.

3.1.4.1.1.6 t:ImAddressDictionaryEntryType Complex Type

The **ImAddressDictionaryEntryType** complex type represents a collection of instant messaging addresses for a contact.

```
<xs:complexType name="ImAddressDictionaryEntryType">
  <xs:simpleContent>
    <xs:extension
      base="xs:string"
    >
      <xs:attribute name="key"
        type="t:ImAddressKeyType"
        use="required"
      />
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

Attributes

Attribute name	Type	Description
key	t:ImAddressKeyType (section 3.1.4.1.2.3)	Represents the instant messaging addresses for a contact.

3.1.4.1.1.7 t:ImAddressDictionaryType Complex Type

The **ImAddressDictionaryType** complex type contains instant messaging addresses for a contact.

```
<xs:complexType name="ImAddressDictionaryType">
```

```

<xs:sequence>
  <xs:element name="Entry"
    type="t:ImAddressDictionaryEntryType"
    maxOccurs="unbounded"
  />
</xs:sequence>
</xs:complexType>

```

Child Elements

Element name	Type	Description
Entry	t:ImAddressDictionaryEntryType (section 3.1.4.1.1.8)	Represents a collection of instant messaging addresses for a contact.

3.1.4.1.1.8 t:PhoneNumberDictionaryEntryType Complex Type

The **PhoneNumberDictionaryEntryType** complex type contains a telephone number for a contact.

```

<xs:complexType name="PhoneNumberDictionaryEntryType">
  <xs:simpleContent>
    <xs:extension
      base="xs:string"
    >
      <xs:attribute name="Key"
        type="t:PhoneNumberKeyType"
        use="required"
      />
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>

```

Attributes

Attribute name	Type	Description
Key	t:PhoneNumberKeyType (section 3.1.4.1.2.4)	Represents types of telephone numbers for a contact.

3.1.4.1.1.9 t:PhoneNumberDictionaryType Complex Type

The **PhoneNumberDictionaryType** complex type represents telephone numbers for a contact.

```

<xs:complexType name="PhoneNumberDictionaryType">
  <xs:sequence>
    <xs:element name="Entry"
      type="t:PhoneNumberDictionaryEntryType"
      maxOccurs="unbounded"
    />
  </xs:sequence>

```

</xs:complexType>

Child Elements

Element name	Type	Description
Entry	t:PhoneNumberDictionaryEntryType (section 3.1.4.1.1.8)	Contains a telephone number for a contact.

3.1.4.1.1.10 t:PhysicalAddressDictionaryEntryType Complex Type

The **PhysicalAddressDictionaryEntryType** complex type contains information that defines a physical address, such as a street address.

```
<xs:complexType name="PhysicalAddressDictionaryEntryType">
  <xs:sequence>
    <xs:element name="Street"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="City"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="State"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="CountryOrRegion"
      type="xs:string"
      minOccurs="0"
    />
    <xs:element name="PostalCode"
      type="xs:string"
      minOccurs="0"
    />
  </xs:sequence>
  <xs:attribute name="Key"
    type="t:PhysicalAddressKeyType"
    use="required"
  />
</xs:complexType>
```

Child Elements

Element name	Type	Description
Street	xs:string [XMLSCHEMA2]	Contains the street address for a contact item.
City	xs:string	Contains the city name for a contact item.
State	xs:string	Contains the state for a contact item.

Element name	Type	Description
CountryOrRegion	xs:string	Contains the country or region for a contact item.
PostalCode	xs:string	Contains the postal code for a contact item.

Attributes

Attribute name	Type	Description
Key	t:PhysicalAddressKeyType (section 3.1.4.1.2.6)	Identifies the types of physical addresses for a contact.

3.1.4.1.1.11 t:PhysicalAddressDictionaryType Complex Type

The **PhysicalAddressDictionaryType** complex type contains physical addresses that are associated with a contact.

```
<xs:complexType name="PhysicalAddressDictionaryType">
  <xs:sequence>
    <xs:element name="Entry"
      type="t:PhysicalAddressDictionaryEntryType"
      maxOccurs="unbounded"
    />
  </xs:sequence>
</xs:complexType>
```

Child Elements

Element name	Type	Description
Entry	t:PhysicalAddressDictionaryEntryType (section 3.1.4.1.1.10)	Contains information that defines a physical address, such as a street address.

3.1.4.1.2 Simple Types

The following XML schema simple type definitions are specific to this operation.

3.1.4.1.2.1 t:EmailAddressKeyType Simple Type

The **EmailAddressKeyType** simple type represents a way to identify a single e-mail address within the e-mail address collection for a contact.

```
<xs:simpleType name="EmailAddressKeyType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="EmailAddress1"
    />
  </xs:restriction>
</xs:simpleType>
```



```

    <xs:enumeration
      value="EmailAddress2"
    />
    <xs:enumeration
      value="EmailAddress3"
    />
  </xs:restriction>
</xs:simpleType>

```

Enumeration

The following values are defined by the **EmailAddressKeyType** simple type:

Value	Meaning
EmailAddress1	Identifies the first e-mail address for the contact.
EmailAddress2	Identifies the second e-mail address for the contact.
EmailAddress3	Identifies the third e-mail address for the contact.

3.1.4.1.2.2 t:FileAsMappingType Simple Type

The **FileAsMappingType** simple type defines how to construct what is displayed for a contact in the **FileAs** property.

```

<xs:simpleType name="FileAsMappingType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="None"
    />
    <xs:enumeration
      value="LastCommaFirst"
    />
    <xs:enumeration
      value="FirstSpaceLast"
    />
    <xs:enumeration
      value="Company"
    />
    <xs:enumeration
      value="LastCommaFirstCompany"
    />
    <xs:enumeration
      value="CompanyLastFirst"
    />
    <xs:enumeration
      value="LastFirst"
    />
    <xs:enumeration
      value="LastFirstCompany"
    />
    <xs:enumeration
      value="CompanyLastCommaFirst"
    />
  </xs:restriction>
</xs:simpleType>

```

```

/>
<xs:enumeration
  value="LastFirstSuffix"
/>
<xs:enumeration
  value="LastSpaceFirstCompany"
/>
<xs:enumeration
  value="CompanyLastSpaceFirst"
/>
<xs:enumeration
  value="LastSpaceFirst"
/>
<xs:enumeration
  value="DisplayName"
/>
<xs:enumeration
  value="FirstName"
/>
<xs:enumeration
  value="LastFirstMiddleSuffix"
/>
<xs:enumeration
  value="LastName"
/>
<xs:enumeration
  value="Empty"
/>
</xs:restriction>
</xs:simpleType>

```

Enumeration

The following values are defined by the **FileAsMappingType** simple type:

Value	Meaning
None	Indicates that the FileAs value is not constructed from other contact's properties, but is represented by a string, saved "as is".
LastCommaFirst	Indicates that the contact is displayed as the last name followed by a comma, a space, the first name, a space, and the middle name.
FirstSpaceLast	Indicates that the contact is displayed as the first name followed by a space, the middle name, a space, the last name, a space, and the suffix for the contact.
Company	Indicates that the company name is displayed.
LastCommaFirstCompany	Indicates that the contact is displayed as the last name, a comma, a space, the first name, a space, the middle name, a space, a left parenthesis, the company name, and a right parenthesis.
CompanyLastFirst	Indicates that the contact is displayed as the company name, a space, a left parenthesis, the last name, the first name, a space, the middle name, and a right parenthesis.

Value	Meaning
LastFirst	Indicates that the contact is displayed as the last name followed by the first name, a space, and the middle name.
LastFirstCompany	Indicates that the contact is displayed as the last name, the first name, a space, the middle name, a space, a left parenthesis, the company name, and a right parenthesis.
CompanyLastCommaFirst	Indicates that the contact is displayed as the company name, a space, a left parenthesis, the last name, a comma, a space, and the first name, a space, the middle name, and a right parenthesis.
LastFirstSuffix	Indicates that the contact is displayed as the last name, the first name, a space, and the suffix for the contact.
LastSpaceFirstCompany	Indicates that the contact is displayed as the last name, a space, the first name, a space, the middle name, a space, a left parenthesis, the company name, and a right parenthesis.
CompanyLastSpaceFirst	Indicates that the contact is displayed as the company name, a space, a left parenthesis, the last name, a space, the first name, a space, the middle name, and a right parenthesis.
LastSpaceFirst	Indicates that the contact is displayed as the last name, followed by a space, the first name, a space, and the middle name.
DisplayName<6>	Indicates that the contact is displayed as the display name.
FirstName<7>	Indicates that the contact is displayed as the first name.
LastFirstMiddleSuffix<8>	Indicates that the contact is displayed as the last name, the first name, the middle name, and the suffix for the contact.
LastName<9>	Indicates that the contact is displayed as the last name.
Empty<10>	Indicates that the contact is displayed as empty.

3.1.4.1.2.3 t:ImAddressKeyType Simple Type

The **ImAddressKeyType** enumeration represents the instant messaging addresses for a contact.

```
<xs:simpleType name="ImAddressKeyType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="ImAddress1"
    />
    <xs:enumeration
      value="ImAddress2"
    />
    <xs:enumeration
      value="ImAddress3"
    />
  </xs:restriction>
</xs:simpleType>
```

Enumeration

The following values are defined by the **ImAddressKeyType** simple type:

Value	Meaning
ImAddress1	Identifies the first instant messaging address for the user.
ImAddress2	Identifies the second instant messaging address for the user.
ImAddress3	Identifies the third instant messaging address for the user.

3.1.4.1.2.4 t:PhoneNumberKeyType Simple Type

The **PhoneNumberKeyType** simple type represents types of telephone numbers for a contact.

```
<xs:simpleType name="PhoneNumberKeyType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="AssistantPhone"
    />
    <xs:enumeration
      value="BusinessFax"
    />
    <xs:enumeration
      value="BusinessPhone"
    />
    <xs:enumeration
      value="BusinessPhone2"
    />
    <xs:enumeration
      value="Callback"
    />
    <xs:enumeration
      value="CarPhone"
    />
    <xs:enumeration
      value="CompanyMainPhone"
    />
    <xs:enumeration
      value="HomeFax"
    />
    <xs:enumeration
      value="HomePhone"
    />
    <xs:enumeration
      value="HomePhone2"
    />
    <xs:enumeration
      value="Isdn"
    />
    <xs:enumeration
      value="MobilePhone"
    />
    <xs:enumeration
      value="OtherFax"
    />
  </xs:restriction>
</xs:simpleType>
```

```

/>
<xs:enumeration
  value="OtherTelephone"
/>
<xs:enumeration
  value="Pager"
/>
<xs:enumeration
  value="PrimaryPhone"
/>
<xs:enumeration
  value="RadioPhone"
/>
<xs:enumeration
  value="Telex"
/>
<xs:enumeration
  value="TtyTddPhone"
/>
</xs:restriction>
</xs:simpleType>

```

Enumeration

The following values are defined by the **PhoneNumberKeyType** simple type:

Value	Meaning
AssistantPhone	Identifies the telephone number as the assistant's telephone number.
BusinessFax	Identifies the telephone number as a business fax number.
BusinessPhone	Identifies the telephone number as a business telephone number.
BusinessPhone2	Identifies the telephone number as a second business telephone number.
Callback	Identifies the telephone number as a callback number.
CarPhone	Identifies the telephone number as a car telephone number.
CompanyMainPhone	Identifies the telephone number as the company's main telephone number.
HomeFax	Identifies the telephone number as a home fax number.
HomePhone	Identifies the telephone number as a home telephone number.
HomePhone2	Identifies the telephone number as a second home telephone number.
Isdn	Identifies the telephone number as an Integrated Services Digital Network (ISDN) line.
MobilePhone	Identifies the telephone number as a mobile phone number.
OtherFax	Identifies the telephone number as another fax number.
OtherTelephone	Identifies the telephone number as another telephone number.
Pager	Identifies the telephone number as a pager.

Value	Meaning
PrimaryPhone	Identifies the telephone number as the primary telephone number.
RadioPhone	Identifies the telephone number as a radio telephone.
Telex	Identifies the telephone number as a telex telephone number.
TtyTddPhone	Identifies the telephone number as a teletype/telecommunication device for the deaf (TTY/TDD) telephone number.

3.1.4.1.2.5 t:PhysicalAddressIndexType Simple Type

The **PhysicalAddressIndexType** simple type identifies the display types for physical addresses.

```
<xs:simpleType name="PhysicalAddressIndexType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="None"
    />
    <xs:enumeration
      value="Business"
    />
    <xs:enumeration
      value="Home"
    />
    <xs:enumeration
      value="Other"
    />
  </xs:restriction>
</xs:simpleType>
```

Enumeration

The following values are defined by the **PhysicalAddressIndexType** simple type:

Value	Meaning
None	Indicates that no type is specified for the address.
Business	Displays the address as a business address.
Home	Displays the address as a home address.
Other	Displays the address as an address of type other.

3.1.4.1.2.6 t:PhysicalAddressKeyType Simple Type

The **PhysicalAddressKeyType** simple type identifies the types of physical addresses for a contact.

```
<xs:simpleType name="PhysicalAddressKeyType">
  <xs:restriction
    base="xs:string"
  >
```

```

>
  <xs:enumeration
    value="Business"
  />
  <xs:enumeration
    value="Home"
  />
  <xs:enumeration
    value="Other"
  />
</xs:restriction>
</xs:simpleType>

```

Enumeration

The following values are defined by the **PhysicalAddressKeyType** simple type:

Value	Meaning
Business	Identifies the address as a business address.
Home	Identifies the address as a home address.
Other	Identifies the address as an address of type other.

3.1.4.2 DeleteItem

This protocol uses the **DeleteItem** operation specified in [\[MS-OXWSCORE\]](#) section 3.1.4.3 to delete contact item elements.

```

<wsdl:operation name="DeleteItem">
  <wsdl:input message="tns:DeleteItemSoapIn" />
  <wsdl:output message="tns:DeleteItemSoapOut" />
</wsdl:operation>

```

Request

Message format	Description
tns:DeleteItemSoapIn ([MS-OXWSCORE] section 3.1.4.3.1.1)	Specifies the SOAP message that defines the contact item to delete. The Items child element of the DeleteItem ([MS-OXWSCORE] section 3.1.4.3.2.1) child element that specifies the XML request MUST contain one or more t:ItemIdType ([MS-OXWSCORE] section 2.2.4.19) elements. All other elements MUST be empty.

Response

Message format	Description
tns:DeleteItemSoapOut ([MS-OXWSCORE] section 3.1.4.3.1.2)	Specifies the SOAP message returned by the server in response.

3.1.4.3 UpdateItem

This protocol uses the **UpdateItem** operation specified in [\[MS-OXWSCORE\]](#) section 3.1.4.9 to update contact item elements.

```
<wsdl:operation name="UpdateItem">
  <wsdl:input message="tns:UpdateItemSoapIn" />
  <wsdl:output message="tns:UpdateItemSoapOut" />
</wsdl:operation>
```

Request

Message format	Description
tns:UpdateItemSoapIn ([MS-OXWSCORE] section 3.1.4.9.1.1)	Specifies the SOAP message that defines the contact item to update. The Items child element of the UpdateItem ([MS-OXWSCORE] section 3.1.4.9.2.1) child element that specifies the XML request MUST contain one or more t:ContactItemType elements (section 2.2.4.2). All other elements MUST be empty.

Response

Message format	Description
tns:UpdateItemSoapOut ([MS-OXWSCORE] section 3.1.4.9.1.2)	Specifies the SOAP message returned by the server in response.

3.1.4.4 MoveItem

This protocol uses the **MoveItem** operation specified in [\[MS-OXWSCORE\]](#) section 3.1.4.7 to move contact item elements.

```
<wsdl:operation name="MoveItem">
  <wsdl:input message="tns:MoveItemSoapIn" />
  <wsdl:output message="tns:MoveItemSoapOut" />
</wsdl:operation>
```

Request

Message format	Description
tns:MoveItemSoapIn ([MS-OXWSCORE] section 3.1.4.7.1.1)	Specifies the SOAP message that defines the contact item to move. The Items child element of the MoveItem child element ([MS-OXWSCORE] section 3.1.4.7.2.1) that specifies the XML request MUST contain the following elements: t:TargetFolderIdType ([MS-OXWFSFOLD] section 2.2.4.14), and t:ItemIdType ([MS-OXWSCORE] section 2.2.4.19). All other elements MUST be empty.

Response

Message format	Description
tns:MoveItemSoapOut ([MS-OXWSCORE] section 3.1.4.7.1.2)	Specifies the SOAP message returned by the server in response.

Message format	Description
3.1.4.7.1.2)	server in response.

3.1.4.5 CopyItem

This protocol uses the **CopyItem** operation specified in [\[MS-OXWSCORE\]](#) section 3.1.4.1 to copy contact item elements.

```
<wsdl:operation name="CopyItem">
  <wsdl:input message="tns:CopyItemSoapIn" />
  <wsdl:output message="tns:CopyItemSoapOut" />
</wsdl:operation>
```

Request

Message format	Description
tns:CopyItemSoapIn ([MS-OXWSCORE] section 3.1.4.1.1.1)	Specifies the SOAP message that defines the contact item to copy. The Items child element of the CopyItem child element that specifies the XML request MUST contain the following elements: t:TargetFolderIdType ([MS-OXWFSFOLD] section 2.2.4.14), and t:ItemIdType ([MS-OXWSCORE] section 2.2.4.19). All other elements MUST be empty.

Response

Message format	Description
tns:CopyItemSoapOut ([MS-OXWSCORE] section 3.1.4.1.1.2)	Specifies the SOAP message returned by the server in response.

3.1.4.6 CreateItem

This protocol uses the **CreateItem** operation specified in [\[MS-OXWSCORE\]](#) section 3.1.4.2 to create contact item elements.

```
<wsdl:operation name="CreateItem">
  <wsdl:input message="tns:CreateItemSoapIn" />
  <wsdl:output message="tns:CreateItemSoapOut" />
</wsdl:operation>
```

Request

Message format	Description
tns:CreateItemSoapIn ([MS-OXWSCORE] section 3.1.4.2.1.1)	Specifies the SOAP message that defines the contact item to create. The Items child element of the CreateItem ([MS-OXWSCORE] section 3.1.4.2.2.1) child element that specifies the XML request MUST contain one or more t:ContactItemType elements (section 2.2.4.2). All other elements MUST be empty.

Response

Message format	Description
tns:CreateItemSoapOut ([MS-OXWSCORE] section 3.1.4.2.1.2)	Specifies the SOAP message returned by the server in response.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

None.

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

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

File name	Description	Section
MS-OXWSCONT.wsdl	Contains the WSDL for the implementation of this protocol.	6
MS-OXWSCONT-types.xsd	Contains the XML schema type definitions that are used in this protocol.	Z
MS-OXWSCORE-messages.xsd	Contains XML schema message definitions that are referred to by this protocol.	[MS-OXWSCORE] section 7.1

These files have to be placed in a common folder for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSCONT-types.xsd schema have to be placed in the common folder with these files.

This section contains the content of the MS-OXWSCONT.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:s="http://www.w3.org/2001/XMLSchema" 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="Exchange2013"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
      <xs:include schemaLocation="MS-OXWSCORE-messages.xsd"/>
    </xs:schema>
  </wsdl:types>
  <wsdl:portType name="ExchangeServicePortType">
    <wsdl:operation name="GetItem">
      <wsdl:input message="tns:GetItemSoapIn"/>
      <wsdl:output message="tns:GetItemSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="CreateItem">
      <wsdl:input message="tns:CreateItemSoapIn"/>
      <wsdl:output message="tns:CreateItemSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="DeleteItem">
      <wsdl:input message="tns>DeleteItemSoapIn"/>
      <wsdl:output message="tns>DeleteItemSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="UpdateItem">
      <wsdl:input message="tns:UpdateItemSoapIn"/>
      <wsdl:output message="tns:UpdateItemSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="MoveItem">
      <wsdl:input message="tns:MoveItemSoapIn"/>
      <wsdl:output message="tns:MoveItemSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="CopyItem">
      <wsdl:input message="tns:CopyItemSoapIn"/>
    </wsdl:operation>
  </wsdl:portType>

```

```

        <wsdl:output message="tns:CopyItemSoapOut"/>
    </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="GetItem">
        <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetItem"/>
        <wsdl:input>
            <soap:header message="tns:GetItemSoapIn" part="Impersonation"
use="literal"/>
            <soap:header message="tns:GetItemSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:header message="tns:GetItemSoapIn" part="RequestVersion"
use="literal"/>
            <soap:header message="tns:GetItemSoapIn" part="TimeZoneContext"
use="literal"/>
            <soap:body parts="request" use="literal"/>
        </wsdl:input>
        <wsdl:output>
            <soap:body parts="GetItemResult" use="literal"/>
            <soap:header message="tns:GetItemSoapOut" part="ServerVersion"
use="literal"/>
        </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="CreateItem">
        <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/CreateItem"/>
        <wsdl:input>
            <soap:header message="tns:CreateItemSoapIn" part="Impersonation"
use="literal"/>
            <soap:header message="tns:CreateItemSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:header message="tns:CreateItemSoapIn" part="RequestVersion"
use="literal"/>
            <soap:header message="tns:CreateItemSoapIn" part="TimeZoneContext"
use="literal"/>
            <soap:body parts="request" use="literal"/>
        </wsdl:input>
        <wsdl:output>
            <soap:body parts="CreateItemResult" use="literal"/>
            <soap:header message="tns:CreateItemSoapOut" part="ServerVersion"
use="literal"/>
        </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="DeleteItem">
        <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/DeleteItem"/>
        <wsdl:input>
            <soap:header message="tns>DeleteItemSoapIn" part="Impersonation"
use="literal"/>
            <soap:header message="tns>DeleteItemSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:header message="tns>DeleteItemSoapIn" part="RequestVersion"
use="literal"/>
            <soap:body parts="request" use="literal"/>

```

```

        </wsdl:input>
        <wsdl:output>
            <soap:body parts="DeleteItemResult" use="literal"/>
            <soap:header message="tns:DeleteItemSoapOut" part="ServerVersion"
use="literal"/>
        </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="UpdateItem">
        <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/UpdateItem"/>
        <wsdl:input>
            <soap:header message="tns:UpdateItemSoapIn" part="Impersonation"
use="literal"/>
            <soap:header message="tns:UpdateItemSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:header message="tns:UpdateItemSoapIn" part="RequestVersion"
use="literal"/>
            <soap:header message="tns:UpdateItemSoapIn" part="TimeZoneContext"
use="literal"/>
            <soap:body parts="request" use="literal"/>
        </wsdl:input>
        <wsdl:output>
            <soap:body parts="UpdateItemResult" use="literal"/>
            <soap:header message="tns:UpdateItemSoapOut" part="ServerVersion"
use="literal"/>
        </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="MoveItem">
        <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/MoveItem"/>
        <wsdl:input>
            <soap:header message="tns:MoveItemSoapIn" part="Impersonation"
use="literal"/>
            <soap:header message="tns:MoveItemSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:header message="tns:MoveItemSoapIn" part="RequestVersion"
use="literal"/>
            <soap:body parts="request" use="literal"/>
        </wsdl:input>
        <wsdl:output>
            <soap:body parts="MoveItemResult" use="literal"/>
            <soap:header message="tns:MoveItemSoapOut" part="ServerVersion"
use="literal"/>
        </wsdl:output>
    </wsdl:operation>
    <wsdl:operation name="CopyItem">
        <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/CopyItem"/>
        <wsdl:input>
            <soap:header message="tns:CopyItemSoapIn" part="Impersonation"
use="literal"/>
            <soap:header message="tns:CopyItemSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:header message="tns:CopyItemSoapIn" part="RequestVersion"
use="literal"/>
            <soap:body parts="request" use="literal"/>
        </wsdl:input>
        <wsdl:output>
            <soap:body parts="CopyItemResult" use="literal"/>

```

```

        <soap:header message="tns:CopyItemSoapOut" part="ServerVersion"
use="literal"/>
    </wsdl:output>
</wsdl:operation>
</wsdl:binding>
<wsdl:message name="GetItemSoapIn">
    <wsdl:part name="request" element="tns:GetItem"/>
    <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
    <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
    <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
</wsdl:message>
<wsdl:message name="GetItemSoapOut">
    <wsdl:part name="GetItemResult" element="tns:GetItemResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="CreateItemSoapIn">
    <wsdl:part name="request" element="tns:CreateItem"/>
    <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
    <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
    <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
</wsdl:message>
<wsdl:message name="CreateItemSoapOut">
    <wsdl:part name="CreateItemResult" element="tns:CreateItemResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="DeleteItemSoapIn">
    <wsdl:part name="request" element="tns>DeleteItem"/>
    <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="DeleteItemSoapOut">
    <wsdl:part name="DeleteItemResult" element="tns>DeleteItemResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="UpdateItemSoapIn">
    <wsdl:part name="request" element="tns:UpdateItem"/>
    <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
    <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
    <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
</wsdl:message>
<wsdl:message name="UpdateItemSoapOut">
    <wsdl:part name="UpdateItemResult" element="tns:UpdateItemResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="MoveItemSoapIn">
    <wsdl:part name="request" element="tns:MoveItem"/>
    <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="MoveItemSoapOut">
    <wsdl:part name="MoveItemResult" element="tns:MoveItemResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
<wsdl:message name="CopyItemSoapIn">

```



```
<wsdl:part name="request" element="tns:CopyItem"/>
<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="CopyItemSoapOut">
  <wsdl:part name="CopyItemResult" element="tns:CopyItemResponse"/>
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
</wsdl:definitions>
```

7 Appendix B: Full XML Schema

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

This section contains the contents of the MS-OXWSCONT-types.xsd file and information about additional files that this schema file requires to operate correctly.

MS-OXWSCONT-types.xsd includes the file shown in the following table. To operate correctly, this file has to be present in the folder that contains the WSDL, types schema, and messages schema files for this protocol.

File name	Defining specification
MS-OXWSCDATA-types.xsd	[MS-OXWSCDATA] section 7.2

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
elementFormDefault="qualified" version="Exchange2013" id="types">
  <xs:import namespace="http://www.w3.org/XML/1998/namespace"/>
  <xs:include schemaLocation="MS-OXWSCDATA-types.xsd"/>
  <xs:complexType name="CompleteNameType">
    <xs:sequence>
      <xs:element name="Title" type="xs:string" minOccurs="0"/>
      <xs:element name="FirstName" type="xs:string" minOccurs="0"/>
      <xs:element name="MiddleName" type="xs:string" minOccurs="0"/>
      <xs:element name="LastName" type="xs:string" minOccurs="0"/>
      <xs:element name="Suffix" type="xs:string" minOccurs="0"/>
      <xs:element name="Initials" type="xs:string" minOccurs="0"/>
      <xs:element name="FullName" type="xs:string" minOccurs="0"/>
      <xs:element name="Nickname" type="xs:string" minOccurs="0"/>
      <xs:element name="YomiFirstName" type="xs:string" minOccurs="0"/>
      <xs:element name="YomiLastName" type="xs:string" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="ContactItemType">
    <xs:complexContent>
      <xs:extension base="t:ItemType">
        <xs:sequence>
          <xs:element name="FileAs" type="xs:string" minOccurs="0"/>
          <xs:element name="FileAsMapping" type="t:FileAsMappingType" minOccurs="0"/>
          <xs:element name="DisplayName" type="xs:string" minOccurs="0"/>
          <xs:element name="GivenName" type="xs:string" minOccurs="0"/>
          <xs:element name="Initials" type="xs:string" minOccurs="0"/>
          <xs:element name="MiddleName" type="xs:string" minOccurs="0"/>
          <xs:element name="Nickname" type="xs:string" minOccurs="0"/>
          <xs:element name="CompleteName" type="t:CompleteNameType" minOccurs="0"/>
          <xs:element name="CompanyName" type="xs:string" minOccurs="0"/>
          <xs:element name="EmailAddresses" type="t:EmailAddressDictionaryType"
minOccurs="0"/>
          <xs:element name="PhysicalAddresses" type="t:PhysicalAddressDictionaryType"
minOccurs="0"/>
          <xs:element name="PhoneNumbers" type="t:PhoneNumberDictionaryType" minOccurs="0"/>
          <xs:element name="AssistantName" type="xs:string" minOccurs="0"/>
          <xs:element name="Birthday" type="xs:dateTime" minOccurs="0"/>
          <xs:element name="BusinessHomePage" type="xs:anyURI" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
</xs:schema>
```

```

    <xs:element name="Children" type="t:ArrayOfStringsType" minOccurs="0"/>
    <xs:element name="Companies" type="t:ArrayOfStringsType" minOccurs="0"/>
    <xs:element name="ContactSource" type="t:ContactSourceType" minOccurs="0"/>
    <xs:element name="Department" type="xs:string" minOccurs="0"/>
    <xs:element name="Generation" type="xs:string" minOccurs="0"/>
    <xs:element name="ImAddresses" type="t:ImAddressDictionaryType" minOccurs="0"/>
    <xs:element name="JobTitle" type="xs:string" minOccurs="0"/>
    <xs:element name="Manager" type="xs:string" minOccurs="0"/>
    <xs:element name="Mileage" type="xs:string" minOccurs="0"/>
    <xs:element name="OfficeLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="PostalAddressIndex" type="t:PhysicalAddressIndexType"
minOccurs="0"/>
    <xs:element name="Profession" type="xs:string" minOccurs="0"/>
    <xs:element name="SpouseName" type="xs:string" minOccurs="0"/>
    <xs:element name="Surname" type="xs:string" minOccurs="0"/>
    <xs:element name="WeddingAnniversary" type="xs:dateTime" minOccurs="0"/>
    <xs:element name="HasPicture" type="xs:boolean" minOccurs="0"/>
    <xs:element name="PhoneticFullName" type="xs:string" minOccurs="0" />
    <xs:element name="PhoneticFirstName" type="xs:string" minOccurs="0" />
    <xs:element name="PhoneticLastName" type="xs:string" minOccurs="0" />
    <xs:element name="Alias" type="xs:string" minOccurs="0" />
    <xs:element name="Notes" type="xs:string" minOccurs="0" />
    <xs:element name="Photo" type="xs:base64Binary" minOccurs="0" />
    <xs:element name="UserSMIMECertificate" type="t:ArrayOfBinaryType" minOccurs="0" />
    <xs:element name="MSExchangeCertificate" type="t:ArrayOfBinaryType" minOccurs="0"
/>

    <xs:element name="DirectoryId" type="xs:string" minOccurs="0" />
    <xs:element name="ManagerMailbox" type="t:SingleRecipientType" minOccurs="0" />
    <xs:element name="DirectReports" type="t:ArrayOfRecipientsType" minOccurs="0" />
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="ArrayOfBinaryType">
  <xs:sequence>
    <xs:element name="Base64Binary" type="xs:base64Binary" minOccurs="0"
maxOccurs="unbounded" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ContactsFolderType">
  <xs:complexContent>
    <xs:extension base="t:BaseFolderType">
      <xs:sequence>
        <xs:element name="SharingEffectiveRights" type="t:PermissionReadAccessType"
minOccurs="0"/>
        <xs:element name="PermissionSet" type="t:PermissionSetType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:simpleType name="ContactSourceType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ActiveDirectory"/>
    <xs:enumeration value="Store"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="ContactsViewType">
  <xs:complexContent>
    <xs:extension base="t:BasePagingType">

```

```

        <xs:attribute name="InitialName" type="xs:string" use="optional"/>
        <xs:attribute name="FinalName" type="xs:string" use="optional"/>
    </xs:extension>
</xs:complexType>
</xs:complexType>
<xs:complexType name="EmailAddressDictionaryEntryType">
    <xs:simpleContent>
        <xs:extension base="xs:string">
            <xs:attribute name="Key" type="t:EmailAddressKeyType" use="required"/>
            <xs:attribute name="Name" type="xs:string" use="optional"/>
            <xs:attribute name="RoutingType" type="xs:string" use="optional"/>
            <xs:attribute name="MailboxType" type="t:MailboxTypeType" use="optional"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>
<xs:complexType name="EmailAddressDictionaryType">
    <xs:sequence>
        <xs:element name="Entry" type="t:EmailAddressDictionaryEntryType"
maxOccurs="unbounded"/>
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="EmailAddressKeyType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="EmailAddress1"/>
        <xs:enumeration value="EmailAddress2"/>
        <xs:enumeration value="EmailAddress3"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="FileAsMappingType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="LastCommaFirst"/>
        <xs:enumeration value="FirstSpaceLast"/>
        <xs:enumeration value="Company"/>
        <xs:enumeration value="LastCommaFirstCompany"/>
        <xs:enumeration value="CompanyLastFirst"/>
        <xs:enumeration value="LastFirst"/>
        <xs:enumeration value="LastFirstCompany"/>
        <xs:enumeration value="CompanyLastCommaFirst"/>
        <xs:enumeration value="LastFirstSuffix"/>
        <xs:enumeration value="LastSpaceFirstCompany"/>
        <xs:enumeration value="CompanyLastSpaceFirst"/>
        <xs:enumeration value="LastSpaceFirst"/>
        <xs:enumeration value="DisplayName"/>
        <xs:enumeration value="FirstName"/>
        <xs:enumeration value="LastFirstMiddleSuffix"/>
        <xs:enumeration value="LastName"/>
        <xs:enumeration value="Empty"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="ImAddressDictionaryEntryType">
    <xs:simpleContent>
        <xs:extension base="xs:string">
            <xs:attribute name="Key" type="t:ImAddressKeyType" use="required"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>
</xs:complexType>
<xs:complexType name="ImAddressDictionaryType">
    <xs:sequence>

```

```

        <xs:element name="Entry" type="t:ImAddressDictionaryEntryType" maxOccurs="unbounded"/>
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="ImAddressKeyType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="ImAddress1"/>
        <xs:enumeration value="ImAddress2"/>
        <xs:enumeration value="ImAddress3"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="PhoneNumberDictionaryEntryType">
    <xs:simpleContent>
        <xs:extension base="xs:string">
            <xs:attribute name="Key" type="t:PhoneNumberKeyType" use="required"/>
        </xs:extension>
    </xs:simpleContent>
</xs:complexType>
<xs:complexType name="PhoneNumberDictionaryType">
    <xs:sequence>
        <xs:element name="Entry" type="t:PhoneNumberDictionaryEntryType"
maxOccurs="unbounded"/>
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="PhoneNumberKeyType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="AssistantPhone"/>
        <xs:enumeration value="BusinessFax"/>
        <xs:enumeration value="BusinessPhone"/>
        <xs:enumeration value="BusinessPhone2"/>
        <xs:enumeration value="Callback"/>
        <xs:enumeration value="CarPhone"/>
        <xs:enumeration value="CompanyMainPhone"/>
        <xs:enumeration value="HomeFax"/>
        <xs:enumeration value="HomePhone"/>
        <xs:enumeration value="HomePhone2"/>
        <xs:enumeration value="Isdn"/>
        <xs:enumeration value="MobilePhone"/>
        <xs:enumeration value="OtherFax"/>
        <xs:enumeration value="OtherTelephone"/>
        <xs:enumeration value="Pager"/>
        <xs:enumeration value="PrimaryPhone"/>
        <xs:enumeration value="RadioPhone"/>
        <xs:enumeration value="Telex"/>
        <xs:enumeration value="TtyTddPhone"/>
    </xs:restriction>
</xs:simpleType>
<xs:complexType name="PhysicalAddressDictionaryEntryType">
    <xs:sequence>
        <xs:element name="Street" type="xs:string" minOccurs="0"/>
        <xs:element name="City" type="xs:string" minOccurs="0"/>
        <xs:element name="State" type="xs:string" minOccurs="0"/>
        <xs:element name="CountryOrRegion" type="xs:string" minOccurs="0"/>
        <xs:element name="PostalCode" type="xs:string" minOccurs="0"/>
    </xs:sequence>
    <xs:attribute name="Key" type="t:PhysicalAddressKeyType" use="required"/>
</xs:complexType>
<xs:complexType name="PhysicalAddressDictionaryType">
    <xs:sequence>

```

```
        <xs:element name="Entry" type="t:PhysicalAddressDictionaryEntryType"
maxOccurs="unbounded"/>
    </xs:sequence>
</xs:complexType>
<xs:simpleType name="PhysicalAddressIndexType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="Business"/>
        <xs:enumeration value="Home"/>
        <xs:enumeration value="Other"/>
    </xs:restriction>
</xs:simpleType>
<xs:simpleType name="PhysicalAddressKeyType">
    <xs:restriction base="xs:string">
        <xs:enumeration value="Business"/>
        <xs:enumeration value="Home"/>
        <xs:enumeration value="Other"/>
    </xs:restriction>
</xs:simpleType>
</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 2007
- Microsoft Exchange Server 2010
- Microsoft Exchange Server 2013

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.

<1> [Section 2.2.4.1](#): Exchange 2007, Exchange 2010, and Exchange 2010 SP1 do not include the **ArrayOfBinaryType** complex type. This type was introduced in Exchange 2010 SP2.

<2> [Section 2.2.4.2](#): Exchange 2007, Exchange 2010, and Exchange 2010 SP1 do not include the following elements: **PhoneticFullName**, **PhoneticFirstName**, **PhoneticLastName**, **Alias**, **Notes**, **Photo**, **UserSMIMECertificate**, **MSEXchangeCertificate**, **DirectoryId**, **ManagerMailbox**, and **DirectReports**. These elements were introduced in Exchange 2010 SP2.

<3> [Section 3.1.4.1.1.4](#): Exchange 2007 does not support the **Name** attribute.

<4> [Section 3.1.4.1.1.4](#): Exchange 2007 does not support the **RoutingType** attribute.

<5> [Section 3.1.4.1.1.4](#): Exchange 2007 does not support the **MailboxType** attribute.

<6> [Section 3.1.4.1.2.2](#): Exchange 2007 does not support the **DisplayName** attribute.

<7> [Section 3.1.4.1.2.2](#): Exchange 2007 does not support the **FirstName** attribute.

<8> [Section 3.1.4.1.2.2](#): Exchange 2007 does not support the **LastFirstMiddleSuffix** attribute.

<9> [Section 3.1.4.1.2.2](#): Exchange 2007 does not support the **LastName** attribute.

<10> [Section 3.1.4.1.2.2](#): Exchange 2007 does not support the **Empty** attribute.

9 Change Tracking

This section identifies changes that were made to the [MS-OXWSCONT] protocol document between the February 2013 and July 2013 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
1.1 Glossary	Removed "store" from the list of terms that are defined in [MS-OXGLOS].	N	Content updated.
1.1 Glossary	Added "message store" to the list of terms that are defined in [MS-OXGLOS].	N	Content updated.
1.7 Versioning and Capability Negotiation	Clarified the information about localization.	N	Content updated.
2.2.1 Namespaces	Added the wsi prefix to the table of namespaces.	N	Content updated.
2.2.1 Namespaces	Removed targetNamespace from the table.	N	Content updated.
2.2.4 Complex Types	Added t:ArrayOfBinaryType complex type to the table of complex types.	N	Content updated.
3.1 ExchangeServicePortType Server Details	Removed the table of operations.	N	Content updated.
3.1.4.1.1 Complex Types	Moved Complex Types section to appear before the Simple Types section.	Y	Content updated for template compliance.
3.1.4.1.2 Simple Types	Moved SimpleTypes section to appear after the Complex Types section.	Y	Content updated for template compliance.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
6 Appendix A: Full WSDL	Moved content from the WSDL section into this section.	Y	Content updated for template compliance.
Z Appendix B: Full XML Schema	Added section to contain the XML Schema. Moved the content from the Types Schema section into this section.	Y	New content added for template compliance.
	Removed section 6.1 WSDL and moved contents to Appendix A: Full WSDL.	Y	Content removed.
	Removed section 6.3 Messages Schema.	Y	Content removed.
	Removed section 6.1 Types Schema and moved the content to the new Appendix B: Full XML Schema section.	Y	Content removed.

10 Index

A

Abstract data model
 [server](#) 16
[Applicability](#) 7
[Attribute groups](#) 15
[Attributes](#) 15

C

[Capability negotiation](#) 7
[Change tracking](#) 48
[Complex types](#) 8
 [t:ArrayOfBinaryType Complex Type](#) 9
 [t:ContactItemType Complex Type](#) 9

D

Data model - abstract
 [server](#) 16

E

Events
 [local - server](#) 34
 [timer - server](#) 34

F

[Fields - vendor-extensible](#) 7
[Full WSDL](#) 37
[Full XML Schema](#) 42

G

[Glossary](#) 5
[Groups](#) 15

I

[Implementer - security considerations](#) 36
[Index of security parameters](#) 36
[Informative references](#) 6
Initialization
 [server](#) 16
[Introduction](#) 5

L

Local events
 [server](#) 34

M

Message processing
 [server](#) 16
Messages
 [attribute groups](#) 15

[attributes](#) 15
 [complex types](#) 8
 [elements](#) 8
 [enumerated](#) 8
 [groups](#) 15
 [namespaces](#) 8
 [simple types](#) 14
 [syntax](#) 8
 [t:ArrayOfBinaryType Complex Type](#) 9
 [t:ContactItemType Complex Type](#) 9
 [t:ContactSourceType Simple Type](#) 14
 [transport](#) 8

N

[Namespaces](#) 8
[Normative references](#) 5

O

Operations
 [CopyItem](#) 33
 [CreateItem](#) 33
 [DeleteItem](#) 31
 [GetItem](#) 16
 [MoveItem](#) 32
 [UpdateItem](#) 32
[Overview \(synopsis\)](#) 6

P

[Parameters - security index](#) 36
[Preconditions](#) 7
[Prerequisites](#) 7
[Product behavior](#) 47

R

[References](#) 5
 [informative](#) 6
 [normative](#) 5
[Relationship to other protocols](#) 7

S

Security
 [implementer considerations](#) 36
 [parameter index](#) 36
Sequencing rules
 [server](#) 16
Server
 [abstract data model](#) 16
 [CopyItem operation](#) 33
 [CreateItem operation](#) 33
 [DeleteItem operation](#) 31
 [GetItem operation](#) 16
 [initialization](#) 16

- [local events](#) 34
- [message processing](#) 16
- [MoveItem operation](#) 32
- [sequencing rules](#) 16
- [timer events](#) 34
- [timers](#) 16
- [UpdateItem operation](#) 32
- [Simple types](#) 14
 - [t:ContactSourceType Simple Type](#) 14
- [Standards assignments](#) 7
- Syntax
 - [messages - overview](#) 8

T

- [t:ArrayOfBinaryType Complex Typecomplex type](#) 9
- [t:ContactItemType Complex Typecomplex type](#) 9
- [t:ContactSourceType Simple Typesimple type](#) 14
- Timer events
 - [server](#) 34
- Timers
 - [server](#) 16
- [Tracking changes](#) 48
- [Transport](#) 8
- Types
 - [complex](#) 8
 - [simple](#) 14

V

- [Vendor-extensible fields](#) 7
- [Versioning](#) 7

W

- [WSDL](#) 37

X

- [XML Schema](#) 42