

[MS-OXWSCONT]: Contacts Web Service Protocol Specification

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.
- **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. |

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..... | 6 |
| 1.5 | Prerequisites/Preconditions | 7 |
| 1.6 | Applicability Statement..... | 7 |
| 1.7 | Versioning and Capability Negotiation..... | 7 |
| 1.8 | Vendor-Extensible Fields..... | 8 |
| 1.9 | Standards Assignments | 8 |
| 2 | Messages..... | 9 |
| 2.1 | Transport..... | 9 |
| 2.2 | Common Message Syntax | 9 |
| 2.2.1 | Namespaces | 9 |
| 2.2.2 | Messages | 9 |
| 2.2.3 | Elements..... | 9 |
| 2.2.4 | Complex Types | 9 |
| 2.2.4.1 | t:ArrayOfBinaryType Complex Type | 10 |
| 2.2.4.2 | t:ContactItemType Complex Type..... | 10 |
| 2.2.5 | Simple Types | 15 |
| 2.2.5.1 | t:ContactSourceType Simple Type | 15 |
| 2.2.6 | Attributes..... | 16 |
| 2.2.7 | Groups..... | 16 |
| 2.2.8 | Attribute Groups | 16 |
| 3 | Protocol Details..... | 17 |
| 3.1 | ExchangeServicePortType Server Details | 17 |
| 3.1.1 | Server Abstract Data Model | 17 |
| 3.1.2 | Timers | 17 |
| 3.1.3 | Initialization | 17 |
| 3.1.4 | Server Message Processing Events and Sequencing | 17 |
| 3.1.4.1 | GetItem | 18 |
| 3.1.4.1.1 | Simple Types..... | 18 |
| 3.1.4.1.1.1 | t:EmailAddressKeyType Simple Type..... | 18 |
| 3.1.4.1.1.2 | t:FileAsMappingType Simple Type..... | 19 |
| 3.1.4.1.1.3 | t:ImAddressKeyType Simple Type | 21 |
| 3.1.4.1.1.4 | t:PhoneNumberKeyType Simple Type..... | 22 |
| 3.1.4.1.1.5 | t:PhysicalAddressIndexType Simple Type | 23 |
| 3.1.4.1.1.6 | t:PhysicalAddressKeyType Simple Type | 24 |
| 3.1.4.1.2 | Complex Types | 25 |
| 3.1.4.1.2.1 | t:CompleteNameType Complex Type..... | 25 |
| 3.1.4.1.2.2 | t:ContactsFolderType Complex Type | 26 |
| 3.1.4.1.2.3 | t:ContactsViewType Complex Type | 27 |
| 3.1.4.1.2.4 | t:EmailAddressDictionaryEntryType Complex Type..... | 27 |
| 3.1.4.1.2.5 | t:EmailAddressDictionaryType Complex Type | 28 |
| 3.1.4.1.2.6 | t:ImAddressDictionaryEntryType Complex Type | 29 |
| 3.1.4.1.2.7 | t:ImAddressDictionaryType Complex Type..... | 29 |

| | | |
|--------------|---|-----------|
| 3.1.4.1.2.8 | t:PhoneNumberDictionaryEntryType Complex Type..... | 30 |
| 3.1.4.1.2.9 | t:PhoneNumberDictionaryType Complex Type | 30 |
| 3.1.4.1.2.10 | t:PhysicalAddressDictionaryEntryType Complex Type | 31 |
| 3.1.4.1.2.11 | t:PhysicalAddressDictionaryType Complex Type..... | 32 |
| 3.1.4.2 | DeleteItem | 32 |
| 3.1.4.3 | UpdateItem | 33 |
| 3.1.4.4 | MoveItem | 33 |
| 3.1.4.5 | CopyItem | 34 |
| 3.1.4.6 | CreateItem | 34 |
| 3.1.5 | Timer Events | 35 |
| 3.1.6 | Other Local Events | 35 |
| 4 | Protocol Examples..... | 36 |
| 5 | Security..... | 37 |
| 5.1 | Security Considerations for Implementors..... | 37 |
| 5.2 | Index of Security Parameters | 37 |
| 6 | Appendix A: Full WSDL..... | 38 |
| 6.1 | WSDL..... | 38 |
| 6.2 | Types Schema..... | 42 |
| 6.3 | Messages Schema..... | 46 |
| 7 | Appendix B: Product Behavior..... | 47 |
| 8 | Change Tracking..... | 48 |
| 9 | Index | 49 |

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 [\[MS-GLOS\]](#):

XML

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

base64 encoding
contact
distribution list
mailbox
permission
S/MIME (Secure/Multipurpose Internet Mail Extensions)
Simple Mail Transfer Protocol (SMTP)
SOAP message
store
Uniform Resource Identifier (URI)
web server
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

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 Specification](#)".

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

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

[MS-OXWSRSLNM] Microsoft Corporation, "[Resolve Recipient Names 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>

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

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

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

The Contacts Web Service protocol uses SOAP over HTTP and SOAP over HTTPS, as shown in the following figures.

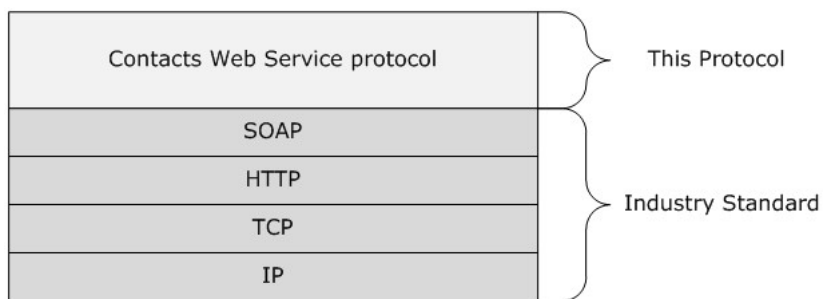


Figure 1: SOAP over HTTP

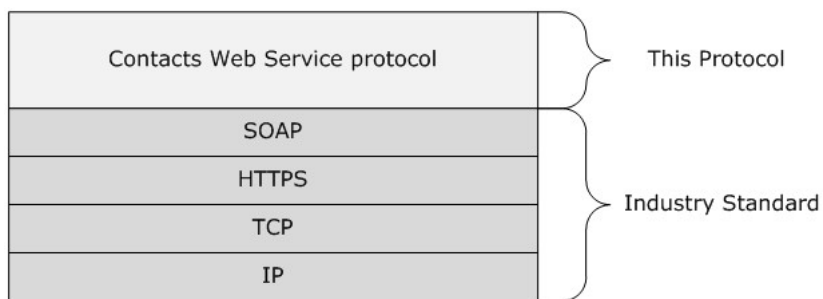


Figure 2: SOAP over HTTPS

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 data **store**.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol uses SOAP 1.1, as specified in section [2.1](#).
- **Protocol Versions:** This protocol specifies only one **WSDL port type** version.
- **Security and Authentication Methods:** This protocol relies on the **Web server** that is hosting it to perform authentication.
- **Localization:** This protocol includes text strings in various messages. Localization considerations for such strings are specified in section [3.1.4](#).
- **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] |
| targetNamespace | http://schemas.microsoft.com/exchange/services/2006/messages | |
| wsdl | http://schemas.xmlsoap.org/wsdl/ | [WSDL] |
| t | 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

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: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: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 3.1.4.1.1.2) | 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 3.1.4.1.2.1) | Represents the complete name of a contact. |
| CompanyName | xs:string | Contains the company name that is associated with a contact. |
| EmailAddresses | t:EmailAddressDictionaryType (section 3.1.4.1.2.5) | Contains e-mail addresses that are associated with a contact. |
| PhysicalAddresses | t:EmailAddressDictionaryType | Represents a collection of physical addresses that are associated with a contact. |
| PhoneNumbers | t:EmailAddressDictionaryType | 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. |
| Companies | t:ArrayOfStringsType | Contains the names of companies |

| Element name | Type | Description |
|--------------------|--|---|
| | | that are associated with a contact. |
| ContactSource | t:ContactSourceType (section 2.2.5.1) | Describes whether the contact is located in the server 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 3.1.4.1.2.7) | 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 3.1.4.1.1.5) | 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. |
| Notes | xs:string | Contains supplementary contact |

| Element name | Type | Description |
|------------------------|--|--|
| | | 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.

| Operation | Description |
|--|---|
| GetItem (section 3.1.4.1) | Defines a request to get an item from a mailbox in the server. |
| DeleteItem (section 3.1.4.2) | Defines a request to delete an item from a mailbox in the server. |
| UpdateItem (section 3.1.4.3) | Defines a request to update an item in a mailbox. |
| MoveItem (section 3.1.4.4) | Defines a request to move an item in the server. |
| 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. |

3.1.1 Server Abstract Data Model

This protocol is a stateless protocol.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Server Message Processing Events and Sequencing

This protocol includes the operations listed in the following table.

| Operation | Description |
|--|------------------------------|
| GetItem (section 3.1.4.1) | Gets items in the server. |
| DeleteItem (section 3.1.4.2) | Deletes items in the server. |
| UpdateItem (section 3.1.4.3) | Updates items in the server. |
| MoveItem (section 3.1.4.4) | Moves items in the server. |
| CopyItem (section 3.1.4.5) | Copies items in the server. |
| CreateItem (section 3.1.4.6) | Creates items in the server. |

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 Simple Types

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

3.1.4.1.1.1 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: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. |

3.1.4.1.1.2 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: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 and the first name. |
| FirstSpaceLast | Indicates that the contact is displayed as the first name followed by a space and the last name. |
| Company | Indicates that the company name is displayed. |
| LastCommaFirstCompany | Indicates that the contact is displayed as the last name, a comma, the first name, and the company name. |
| CompanyLastFirst | Indicates that the contact is displayed as the company name, the last name, and the first name. |
| LastFirst | Indicates that the contact is displayed as the last name followed by the first name. |
| LastFirstCompany | Indicates that the contact is displayed as the last name, the first name, and the company name. |
| CompanyLastCommaFirst | Indicates that the contact is displayed as the company name, the last name, a comma, and the first name. |
| LastFirstSuffix | Indicates that the contact is displayed as the last name, the first name, and the suffix for the contact. |

| Value | Meaning |
|-----------------------|--|
| LastSpaceFirstCompany | Indicates that the contact is displayed as the last name, a space, the first name, and the company name. |
| CompanyLastSpaceFirst | Indicates that the contact is displayed as the company name, the last name, a space, and the first name. |
| LastSpaceFirst | Indicates that the contact is displayed as the last name, followed by a space and the first name. |
| DisplayName | Indicates that the contact is displayed as the display name. |
| FirstName | Indicates that the contact is displayed as the first name. |
| LastFirstMiddleSuffix | Indicates that the contact is displayed as the last name, the first name, the middle name, and the suffix for the contact. |
| LastName | Indicates that the contact is displayed as the last name. |
| Empty | Indicates that the contact is displayed as empty. |

3.1.4.1.1.3 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. |

3.1.4.1.1.4 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:enumeration
      value="OtherTelephone"
    />
    <xs:enumeration
      value="Pager"
    />
    <xs:enumeration
      value="PrimaryPhone"
    />
    <xs:enumeration
      value="RadioPhone"
    />
  </xs:restriction>
</xs:simpleType>
```

```

        <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. |
| 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. |

3.1.4.1.1.5 t:PhysicalAddressIndexType Simple Type

The **PhysicalAddressIndexType** complex 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. |

3.1.4.1.1.6 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. |

3.1.4.1.2 Complex Types

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

3.1.4.1.2.1 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. |

3.1.4.1.2.2 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. |

3.1.4.1.2.3 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

| Name | Type | Description |
|-------------|--|---|
| InitialName | xs:string [XMLSCHEMA2] | Contains the first name in a contacts list to return in a response. |
| FinalName | xs:string | Contains the last name in a contacts list to return in a response. |

3.1.4.1.2.4 t:EmailAddressDictionaryEntryType Complex Type

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

```

<xs:complexType>
  <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 3.1.4.1.1.1) | Contains a value that identifies an e-mail address that is associated with a contact. |
| Name | xs:string [XMLSCHEMA2] | Contains the display name associated with an e-mail address of the contact. |
| RoutingType | xs:string | Contains the routing type associated with an e-mail address of the contact. |
| MailboxType | 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. |

3.1.4.1.2.5 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 3.1.4.1.2.4) | Represents an e-mail address that is associated with a contact. |

3.1.4.1.2.6 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

| Name | Type | Description |
|------|--|---|
| key | t:ImAddressKeyType (section 3.1.4.1.1.3) | Represents the instant messaging addresses for a contact. |

3.1.4.1.2.7 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 3.1.4.1.2.6) | Represents a collection of instant |

| Element name | Type | Description |
|--------------|-------------------------------|------------------------------------|
| | 3.1.4.1.2.8) | messaging addresses for a contact. |

3.1.4.1.2.8 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

| Name | Type | Description |
|------|--|--|
| Key | t:PhoneNumberKeyType (section 3.1.4.1.1.4) | Represents types of telephone numbers for a contact. |

3.1.4.1.2.9 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 3.1.4.1.2.8) | Contains a telephone number for a contact. |

3.1.4.1.2.10 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. |
| CountryOrRegion | xs:string | Contains the country or region for a contact item. |
| PostalCode | xs:string | Contains the postal code for a contact item. |

Attributes

| Name | Type | Description |
|------|--|---|
| Key | t:PhysicalAddressKeyType (section 3.1.4.1.1.6) | Identifies the types of physical addresses for a contact. |

3.1.4.1.2.11 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 3.1.4.1.2.10) | Contains information that defines a physical address, such as a street address. |

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-OXWSFOLD] 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 Implementors

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

The following table lists the XML files that are required to implement the functionality that is specified in this document. The contents of each file are included in this section.

| File name | Description | Section |
|--------------------------|---|---------------------|
| MS-OXWSCONT.wsdl | Contains the WSDL for the implementation of this protocol. | 6.1 |
| MS-OXWSCONT-types.xsd | Contains the XML schema type definitions that are used in this protocol. | 6.2 |
| MS-OXWSCONT-messages.xsd | Contains the XML schema message definitions that are used in this protocol. | 6.3 |

These files need 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-OXWSGTRM-types.xsd or MS-OXWSGTRM-messages.xsd schemas need to be placed in the common folder with these files.

6.1 WSDL

This section contains the content of the MS-OXWSCONT.wsdl file and information about additional files that this WSDL file requires to operate correctly.

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

| Defining specification | File name |
|---|--------------------------|
| [MS-OXWSCORE] section 7.1 | MS-OXWSCORE-messages.xsd |

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: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: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>

```

6.2 Types Schema

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.

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

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

MS-OXWSCONT-types.xsd file:

```

<?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:sequence>
  </xs:complexType>

```

```

    <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: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:complexContent>
</xs:complexType>
<xs:complexType name="EmailAddressDictionaryEntryType">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="Key" type="t:EmailAddressKeyType" use="required"/>
    </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:restriction>
</xs:simpleType>

```

```

        <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: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 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:restriction>
</xs:simpleType>

```

```

        <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>

```

6.3 Messages Schema

No messages schema file is specified for this protocol.

7 Appendix B: 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**, **MSEExchangeCertificate**, **DirectoryId**, **ManagerMailbox**, and **DirectReports**. These elements were introduced in Exchange 2010 SP2.

8 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

9 Index

A

Abstract data model
 [server](#) 17
[Applicability](#) 7
[Attribute groups](#) 16
[Attributes](#) 16

C

[Capability negotiation](#) 7
[Change tracking](#) 48
[Complex types](#) 9
 [t:ArrayOfBinaryType Complex Type](#) 10
 [t:ContactItemType Complex Type](#) 10

D

Data model - abstract
 [server](#) 17

E

Events
 [local - server](#) 35
 [timer - server](#) 35

F

[Fields - vendor-extensible](#) 8
[Full WSDL](#) 38
 [Messages Schema](#) 46
 [Types Schema](#) 42
 [WSDL](#) 38

G

[Glossary](#) 5
[Groups](#) 16

I

[Index of security parameters](#) 37
[Informative references](#) 6
Initialization
 [server](#) 17
[Introduction](#) 5

L

Local events
 [server](#) 35

M

Messages
 [attribute groups](#) 16
 [attributes](#) 16
 [complex types](#) 9

[elements](#) 9
 [enumerated](#) 9
 [groups](#) 16
 [namespaces](#) 9
 [simple types](#) 15
 [syntax](#) 9
 [t:ArrayOfBinaryType Complex Type](#) complex type 10
 [t:ContactItemType Complex Type](#) complex type 10
 [t:ContactSourceType Simple Type](#) simple type 15
 [transport](#) 9

N

[Namespaces](#) 9
[Normative references](#) 5

O

[Overview \(synopsis\)](#) 6

P

[Parameters - security index](#) 37
[Product behavior](#) 47

R

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

S

Security
 [parameter index](#) 37
Server
 [abstract data model](#) 17
 [initialization](#) 17
 [local events](#) 35
 [timer events](#) 35
 [timers](#) 17
 [Simple types](#) 15
 [t:ContactSourceType Simple Type](#) 15
 [Standards assignments](#) 8
Syntax
 [messages - overview](#) 9

T

[t:ArrayOfBinaryType Complex Type](#) complex type 10
 [t:ContactItemType Complex Type](#) complex type 10
 [t:ContactSourceType Simple Type](#) simple type 15
Timer events
 [server](#) 35
Timers

- [server](#) 17
- [Tracking changes](#) 48
- [Transport](#) 9
- Types
 - [complex](#) 9
 - [simple](#) 15

V

- [Vendor-extensible fields](#) 8
- [Versioning](#) 7

W

- [WSDL](#) 38
 - [Messages Schema](#) 46
 - [Types Schema](#) 42
 - [WSDL](#) 38