[MS-OXWSMSHR]:

Folder Sharing 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.

Preliminary Documentation. This Open Specification provides documentation for past and current releases and/or for the pre-release version of this technology. This Open Specification is final documentation for past or current releases as specifically noted in the document, as applicable; it is preliminary documentation for the pre-release versions. Microsoft will release final documentation in connection with the commercial release of the updated or new version of this technology. As the documentation may change between this preliminary version and the final version of this technology, there are risks in relying on preliminary documentation. To the extent that you incur additional

development obligations or any other costs as a result of relying on this preliminary documentation, you do so at your own risk.

Revision Summary

Date	Revision History	Revision Class	Comments
11/4/2009	1.0	Major	Initial availability.
2/10/2010	1.1.0	Minor	Updated the technical content.
5/5/2010	1.1.1	Editorial	Revised and edited the technical content.
8/4/2010	2.0	Major	Significantly changed the technical content.
11/3/2010	2.0	No change	No changes to the meaning, language, or formatting of the technical content.
3/18/2011	3.0	Major	Significantly changed the technical content.
8/5/2011	3.1	Minor	Clarified the meaning of the technical content.
10/7/2011	3.1	No Change	No changes to the meaning, language, or formatting of the technical content.
1/20/2012	4.0	Major	Significantly changed the technical content.
4/27/2012	4.0	No Change	No changes to the meaning, language, or formatting of the technical content.
7/16/2012	4.1	Minor	Clarified the meaning of the technical content.
10/8/2012	4.2	Minor	Clarified the meaning of the technical content.
2/11/2013	4.2	No Change	No changes to the meaning, language, or formatting of the technical content.
7/26/2013	4.2	No Change	No changes to the meaning, language, or formatting of the technical content.
11/18/2013	5.0	Major	Significantly changed the technical content.
2/10/2014	5.0	No Change	No changes to the meaning, language, or formatting of the technical content.
4/30/2014	5.1	Minor	Clarified the meaning of the technical content.
7/31/2014	5.2	Minor	Clarified the meaning of the technical content.
10/30/2014	5.2	No Change	No changes to the meaning, language, or formatting of the technical content.
3/16/2015	6.0	Major	Significantly changed the technical content.

Table of Contents

1 Introduction

The Folder Sharing Web Service Protocol is responsible for managing **calendars** that are shared among users in separate organizations. Clients use the Folder Sharing Web Service Protocol to share calendar appointments, get appointments, and update appointments.

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 [RFC2119]. Sections 1.5 and 1.9 are also normative but do not contain those terms. All other sections and examples in this specification are informative.

1.1 Glossary

The following terms are specific to this document:

calendar: A date range that shows availability, meetings, and appointments for one or more users or resources. See also Calendar object.

Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS): An extension of HTTP that securely encrypts and decrypts webpage requests.

mailbox: A message store that contains email, calendar items, and other Message objects for a single recipient.

recipient: An entity that is in an address list, can receive email messages, and contains a set of attributes (1). Each attribute has a set of associated values.

security token service (STS): A web service that issues claims (2) and packages them in encrypted security tokens.

shared folder: A folder for which a sharing relationship has been created to share items in the folder between two servers.

Simple Mail Transfer Protocol (SMTP): A member of the TCP/IP suite of protocols that is used to transport Internet messages, as described in [RFC5321].

SOAP: A lightweight protocol for exchanging structured information in a decentralized, distributed environment. **SOAP** uses **XML** technologies to define an extensible messaging framework, which provides a message construct that can be exchanged over a variety of underlying protocols. The framework has been designed to be independent of any particular programming model and other implementation-specific semantics. SOAP 1.2 supersedes SOAP 1.1. See [SOAP1.2-1/2003].

SOAP action: The HTTP request header field used to indicate the intent of the **SOAP** request, using a URI value. See [SOAP1.1] section 6.1.1 for more information.

SOAP body: A container for the payload data being delivered by a **SOAP message** to its recipient. See [SOAP1.2-1/2007] section 5.3 for more information.

SOAP header: A mechanism for implementing extensions to a **SOAP message** in a decentralized manner without prior agreement between the communicating parties. See [SOAP1.2-1/2007] section 5.2 for more information.

SOAP message: An **XML** document consisting of a mandatory SOAP envelope, an optional **SOAP header**, and a mandatory **SOAP body**. See [SOAP1.2-1/2007] section 5 for more information.

web server: A server computer that hosts websites and responds to requests from applications.

Web Services Description Language (WSDL): An XML format for describing network services as a set of endpoints that operate on messages that contain either document-oriented or procedure-oriented information. The operations and messages are described abstractly and are bound to a concrete network protocol and message format in order to define an endpoint. Related concrete endpoints are combined into abstract endpoints, which describe a network service. WSDL is extensible, which allows the description of endpoints and their messages regardless of the message formats or network protocols that are used.

WSDL message: An abstract, typed definition of the data that is communicated during a WSDL operation, as described in [WSDL].

WSDL port type: A named set of logically-related, abstract **Web Services Description Language (WSDL)** operations and messages.

XML: The Extensible Markup Language, as described in [XML1.0].

XML namespace: A collection of names that is used to identify elements, types, and attributes in XML documents identified in a URI reference [RFC3986]. A combination of XML namespace and local name allows XML documents to use elements, types, and attributes that have the same names but come from different sources. For more information, see [XMLNS-2ED].

XML namespace prefix: An abbreviated form of an **XML namespace**, as described in [XML].

XML schema: A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by **XML** itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

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

1.2 References

1.2.1 Normative References

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

[MS-OXSHRMSG] Microsoft Corporation, "Sharing Message Attachment Schema".

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

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

[MS-OXWSFOLD] Microsoft Corporation, "Folders and Folder Permissions 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

[RFC2818] Rescorla, E., "HTTP Over TLS", RFC 2818, May 2000, http://www.rfc-editor.org/rfc/rfc2818.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., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[XMLSCHEMA2] Biron, P.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-OXPROTO] Microsoft Corporation, "Exchange Server Protocols System Overview".

[MS-OXWSLVID] Microsoft Corporation, "Federated Internet Authentication Web Service Protocol".

[MS-OXWSSYNC] Microsoft Corporation, "Mailbox Contents Synchronization Web Service Protocol".

[RFC3986] Berners-Lee, T., Fielding, R., and Masinter, L., "Uniform Resource Identifier (URI): Generic Syntax", STD 66, RFC 3986, January 2005, http://www.ietf.org/rfc/rfc3986.txt

[RFC5321] Klensin, J., "Simple Mail Transfer Protocol", RFC 5321, October 2008, http://rfc-editor.org/rfc/rfc5321.txt

[SOAP1.2-1/2003] Gudgin, M., Hadley, M., Mendelsohn, N., et al., "SOAP Version 1.2 Part 1: Messaging Framework", W3C Recommendation, June 2003, http://www.w3.org/TR/2003/REC-soap12-part1-20030624

[SOAP1.2-1/2007] Gudgin, M., Hadley, M., Mendelsohn, N., et al., "SOAP Version 1.2 Part 1: Messaging Framework (Second Edition)", W3C Recommendation 27, April 2007, http://www.w3.org/TR/2007/REC-soap12-part1-20070427/

[XML1.0] Bray, T., Paoli, J., Sperberg-McQueen, C.M., and Maler, E., "Extensible Markup Language (XML) 1.0 (Second Edition)", W3C Recommendation, October 2000, http://www.w3.org/TR/2000/REC-xml-20001006

[XMLNS-2ED] World Wide Web Consortium, "Namespaces in XML 1.0 (Second Edition)", August 2006, http://www.w3.org/TR/2006/REC-xml-names-20060816/

[XML] World Wide Web Consortium, "Extensible Markup Language (XML) 1.0 (Fourth Edition)", W3C Recommendation 16 August 2006, edited in place 29 September 2006, http://www.w3.org/TR/2006/REC-xml-20060816/

1.3 Overview

The Folder Sharing Web Service Protocol specifies data types and operations that enable client applications to manage cross-organization sharing of folder items. This sharing enables a client in one organization to access information from another organization, such as calendar free/busy information. This protocol is applicable to person-to-person sharing scenarios; it does not address organizations sharing information on behalf of the entire organization. The protocol defines operations that are used to create an opaque data structure that authorizes sharing, getting **shared folder** information, and initiating synchronization of shared folders.

1.4 Relationship to Other Protocols

The Folder Sharing Web Service Protocol uses SOAP over **HTTPS**, as described in [RFC2818], as shown in the following layering diagram.

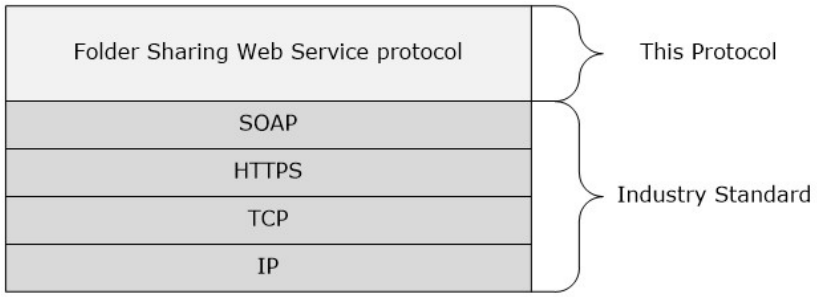

Figure 1: This protocol in relation to other protocols

Clients that implement this protocol use operations from the protocols listed in the following table to perform work.

Protocol	Description
Core Items Web Service Protocol ([MS-OXWSCORE])	Subscribing clients can use the **CreateItem** operation ([MS-OXWSCORE] section 3.1.4.2) to create the local shared folder.
Federated Internet Authentication Web Service Protocol ([MS-OXWSLVID])	Servers can use Federated Internet Authentication Web Service Protocol client operations to obtain authentication tokens to establish sharing relationships among users.
Folders and Folder Permissions Web Service Protocol ([MS-OXWSFOLD])	Clients can use the **GetFolder** operation ([MS-OXWSFOLD] section 3.1.4.6) to retrieve information about folders to be shared, and they can use the **UpdateFolder** operation ([MS-OXWSFOLD] section 3.1.4.8) to update permissions on shared folders.
Mailbox Contents Synchronization Web Service Protocol ([MS-OXWSSYNC])	Clients can use Mailbox Contents Synchronization Web Service Protocol operations to synchronize the local shared folder on the server with the client's local data store.

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

This protocol uses the XML protocols presented in [XMLSCHEMA1] and [XMLSCHEMA2], to describe the message content sent to and from the server.

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

The Folder Sharing Web Service Protocol is applicable to SOAP-based clients, as described in [SOAP1.1].

1.7 Versioning and Capability Negotiation

This document covers versioning in the following areas:

- **Supported Transports:** This protocol uses SOAP 1.1 over HTTPS, as described in section 2.1 and in [SOAP1.1].
- **Protocol Versions:** This protocol specifies only one **WSDL port type** version. The WSDL version of the request is identified by using the **t:RequestServerVersion** element, as described in [MS-OXWSCDATA] section 2.2.4.7, and the version of the server responding to the request is identified by using the **t:SesrverVersionInfo** element, as described in [MS-OXWSCDATA] section 2.2.4.8.
- **Security and Authentication Methods:** This protocol relies on the **web server** that is hosting it to perform authentication.
- **Capability Negotiation**: This protocol does not support version negotiation.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

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. For details, see [SOAP1.1]. This protocol MUST support **SOAP** over HTTPS, as defined in [RFC2818].

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

Prefix	Namespace URI	Reference
soap	http://schemas.xmlsoap.org/wsdl/soap/	[SOAP1.1]
tns	http://schemas.microsoft.com/exchange/services/2006/messages	
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1], [XMLSCHEMA2]
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
t	http://schemas.microsoft.com/exchange/services/2006/types	
m	http://schemas.microsoft.com/exchange/services/2006/messages	

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
GetSharingFolderResponseMessageType	Specifies the response from the **GetSharingFolder** operation (section 3.1.4.3).
GetSharingMetadataResponseMessageType	Specifies the response message from the **GetSharingMetadata** operation (section 3.1.4.4).
RefreshSharingFolderResponseMessageType	Specifies the response message from the **RefreshSharingFolder** operation (section 3.1.4.5).
ArrayOfEncryptedSharedFolderDataType	Specifies an array of encrypted folder data that is passed between servers by the client.
ArrayOfInvalidRecipientsType	Specifies a list of sharing request **recipients** with whom a sharing relationship could not be created.
EncryptedDataContainerType	Specifies an opaque container for encrypted data passed between servers by the client.
EncryptedSharedFolderDataType	Specifies encrypted folder information that is passed between servers by the client.
InvalidRecipientType	Specifies a recipient with whom a sharing relationship could not be created.

2.2.4.1 m:GetSharingFolderResponseMessageType Complex Type

The **GetSharingFolderResponseMessageType** complex type specifies the response message from the **GetSharingFolder** operation, as specified in section 3.1.4.3. The **GetSharingFolderResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [MS-OXWSCDATA] section 2.2.3.52.

```
<xs:complexType name="GetSharingFolderResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseMessageType"
    >
      <xs:sequence
        minOccurs="0"
      >
        <xs:element name="SharingFolderId"
          type="t:FolderIdType"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

Prefix	Namespace URI	Reference

Prefix	Namespace URI	Reference
m	http://schemas.microsoft.com/exchange/services/2006/messages	

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

Element name	Type	Description
SharingFolderId	**t:FolderIdType** ([MS-OXWSCDATA] section 2.2.3.29)	Specifies the local folder identifier for a shared folder.

2.2.4.2 m:GetSharingMetadataResponseMessageType Complex Type

The **GetSharingMetadataResponseMessageType** complex type specifies the response message from the **GetSharingMetadata** operation, as specified in section 3.1.4.4. The **GetSharingMetadataResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [MS-OXWSCDATA] section 2.2.3.52.

```
<xs:complexType name="GetSharingMetadataResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseMessageType"
    >
      <xs:sequence
        minOccurs="0"
      >
        <xs:element name="EncryptedSharedFolderDataCollection"
          type="t:ArrayOfEncryptedSharedFolderDataType"
         />
        <xs:element name="InvalidRecipients"
          type="t:ArrayOfInvalidRecipientsType"
         />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element name	Type	Description
EncryptedSharedFolderDataCollection	**t:ArrayOfEncryptedSharedFolderDataType** (section 2.2.3.4)	Specifies an encrypted payload from the server.
InvalidRecipients	**t:ArrayOfInvalidRecipientsType** (section 2.2.3.5)	Specifies recipients that belong to an organization that does

Element name	Type	Description
		not enable sharing.

2.2.4.3 m:RefreshSharingFolderResponseMessageType Complex Type

The **RefreshSharingFolderResponseMessageType** complex type specifies the response from the **RefreshSharingFolder** operation, as specified in section 3.1.4.5. The **RefreshSharingFolderResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [MS-OXWSCDATA] section 2.2.3.52.

```
<xs:complexType name="RefreshSharingFolderResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseMessageType"
     />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.4 t:ArrayOfEncryptedSharedFolderDataType Complex Type

The **ArrayOfEncryptedSharedFolderDataType** complex type specifies an array of encrypted folder data that is passed between servers by the client.

```
<xs:complexType name="t:ArrayOfEncryptedSharedFolderDataType">
  <xs:choice
    maxOccurs="unbounded"
    minOccurs="0"
  >
    <xs:element name="EncryptedSharedFolderData"
      type="t:EncryptedSharedFolderDataType"
     />
  </xs:choice>
</xs:complexType>
```

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

Element name	Type	Description
EncryptedSharedFolderData	**t:EncryptedSharedFolderDataType** (section 2.2.3.7)	Specifies zero or more encrypted shared folder data items.

2.2.4.5 t:ArrayOfInvalidRecipientsType Complex Type

The **ArrayOfInvalidRecipientsType** complex type specifies a list of sharing request recipients with whom a sharing relationship could not be created.

```
<xs:complexType name="ArrayOfInvalidRecipientsType">
  <xs:choice
    maxOccurs="unbounded"
  >
    <xs:element name="InvalidRecipient"
      type="t:InvalidRecipientType"
     />
  </xs:choice>
</xs:complexType>
```

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

Element	Type	Description
InvalidRecipient	**t:InvalidRecipientType** (section 2.2.3.8)	Specifies a recipient whose organization is not enabled for folder sharing.

2.2.4.6 t:EncryptedDataContainerType Complex Type

The **EncryptedDataContainerType** complex type specifies an opaque container for encrypted data that is passed between servers by the client.

```
<xs:complexType name="EncryptedDataContainerType">
  <xs:sequence>
    <xs:any
      process contents="skip"
     />
  </xs:sequence>
</xs:complexType>
```

2.2.4.7 t:EncryptedSharedFolderDataType Complex Type

The **EncryptedSharedFolderDataType** complex type specifies encrypted folder information that is passed between servers by the client.

```
<xs:complexType name="EncryptedSharedFolderDataType">
  <xs:sequence>
    <xs:element name="Token"
      type="t:EncryptedDataContainerType"
     />
    <xs:element name="Data"
      type="t:EncryptedDataContainerType"
     />
  </xs:sequence>
</xs:complexType>
```

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

Element	Type	Description
Token	**t:EncryptedDataContainerType** (section 2.2.3.6)	Specifies an identification token.

Element	Type	Description
Data	**t:EncryptedDataContainerType**	Specifies the encrypted data.

2.2.4.8 t:InvalidRecipientType Complex Type

The **InvalidRecipientType** complex type specifies a recipient with whom a sharing relationship could not be created.

```
<xs:complexType name="InvalidRecipientType">
  <xs:sequence>
    <xs:element name="SmtpAddress"
      type="t:NonEmptyStringType"
     />
    <xs:element name="ResponseCode"
      type="t:InvalidRecipientResponseCodeType"
     />
    <xs:element name="MessageText"
      type="xs:string"
      minOccurs="0"
     />
  </xs:sequence>
</xs:complexType>
```

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

Element	Type	Description
SmtpAddress	**t:NonEmptyStringType** ([MS-OXWSCDATA] section 2.2.2.18)	Specifies the **SMTP** e-mail address of the recipient.
ResponseCode	**t:InvalidRecipientResponseCodeType** (section 2.2.2.2)	Specifies the reason why the recipient is invalid.
MessageText	**xs:string** ([XMLSCHEMA2])	Specifies the text of an error message. This element can be present.

2.2.5 Simple Types

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

Simple Type	Description
SharingDataType	Specifies the type of data that is shared by a shared folder.
InvalidRecipientResponseCodeType	Specifies the reason why a recipient of a folder sharing request was invalid.

2.2.5.1 t:SharingDataType Simple Type

The **SharingDataType** simple type specifies the type of data that is shared by the shared folder.

```
<xs:simpleType>
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Calendar"
     />
    <xs:enumeration
      value="Contacts"
     />
  </xs:restriction>
</xs:simpleType>
```

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

Value	Description
Calendar	Specifies that the shared folder contains calendar information.
Contacts	Specifies that the shared folder contains contact information.

2.2.5.2 t:InvalidRecipientResponseCodeType Simple Type

The **InvalidRecipientResponseCodeType** simple type specifies the reason why a recipient of a folder sharing request was invalid.

```
<xs:simpleType name="InvalidRecipientResponseCodeType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="CannotObtainTokenFromSTS"
     />
    <xs:enumeration
      value="RecipientOrganizationNotFederated"
     />
    <xs:enumeration
      value="SystemPolicyBlocksSharingWithThisRecipient"
     />
  </xs:restriction>
</xs:simpleType>
```

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

Value	Description
CannotObtainTokenFromSTS	Specifies that there was a problem obtaining a security token from the **security token service (STS)**.
RecipientOrganizationNotFederated	Specifies that a sharing relationship is not available

Value	Description
	with the organization specified in the recipient's SMTP e-mail address.
SystemPolicyBlocksSharingWithThisRecipient	Specifies that the system administrator has set a system policy that blocks sharing with the specified recipient.

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 that are 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 with three operations. In addition, this protocol uses one operation, **CreateItem**, specified in [MS-OXWSCORE] and two operations, **GetFolder** and **UpdateFolder**, specified in [MS-OXWSFOLD]. These operations enable client implementations to establish a sharing relationship between two servers and to manage the folders necessary for that sharing relationship.

3.1.1 Abstract Data Model

This protocol uses a sharing message, as defined in [MS-OXSHRMSG], to establish folder sharing. The **GetSharingMetadata** operation, as specified in section 3.1.4.4, gets the **EncryptedSharedFolderDataType** complex type elements, as specified in section 2.2.3.7, that are required to populate the **SharingMessage** element in the **XML** sharing message, as specified in [MS-OXSHRMSG] section 2.3.6.

This protocol requires two clients: a publishing client that is sharing information on behalf of a user, and a subscribing client that is accessing the shared information. To establish the relationship, the two clients perform the following actions.

Publisher actions:

- Call the **GetSharingMetadata** operation to get an opaque authentication token that identifies the sharing invitation.
- Construct a Sharing Message Attachment XML document, as specified in [MS-OXSHRMSG], from the response from the **GetSharingMetadata** operation. The **EncryptedSharedFolderDataCollection** element of the **GetSharingMetaDataResponse** element, as specified in section 3.1.4.4.2.2, is inserted into the Sharing Message Attachment XML document as the **EncryptedSharedFolderDataCollection** element of the **ProviderType** element, as specified in [MS-OXSHRMSG] section 2.3.4.
- Use the **GetFolder** operation, as specified in [MS-OXWSFOLD] section 3.1.4.6, to get the permission list for the shared folder.
- Use the **UpdateFolder** operation, as specified in [MS-OXWSFOLD] section 3.1.4.8, to add the new subscriber to the permission list.
- Send the Sharing Message Attachment XML document to the subscriber as an attachment on an e-mail message. The attachment requires the following headers:
  - Content-Type: application/x-sharing-metadata-xml;
  - Content-Disposition: attachment; filename="sharing_metadata.xml"

Subscriber actions:

- Call the **CreateItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.2, with an **AcceptSharingInvitationType** element, as specified in [MS-OXWSCDATA] section 2.2.3.3.

- Get the local sharing folder identifier by calling the **GetSharingFolder** operation, as specified in section 3.1.4.3. The local sharing folder is created by the previous call to the **CreateItem** operation.

Start synchronizing the local sharing folder on the server by calling the **RefreshSharingFolder** operation, as specified in section 3.1.4.5, with the local sharing folder identifier that is returned by the **GetSharingFolder** operation.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

This protocol specifies the operations that are listed in the following table.

Operation	Description
GetSharingFolder	Gets the folder identifier of a specified shared folder.
GetSharingMetadata	Requests an encrypted XML payload that identifies the participants in a shared folder exchange.
RefreshSharingFolder	Requests that the server update shared folder information.

This protocol uses the operations that are listed in the following table.

Operation	Specified in	Description
CreateItem	[MS-OXWSCORE] section 3.1.4.2	Creates a folder sharing response message.
GetFolder	[MS-OXWSFOLD] section 3.1.4.6	Gets a specified folder so that the access permissions can be changed.
UpdateFolder	[MS-OXWSFOLD] section 3.1.4.8	Updates the access permissions on the specified folder to enable folder sharing.

3.1.4.1 CreateItem Operation

The **CreateItem** operation, as specified in [MS-OXWSCORE] section 3.1.4.2, creates **AcceptSharingInvitationType** complex type elements, as specified in [MS-OXWSCDATA] section 2.2.3.3.

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

The **Items** child element of the **CreateItem** child element, as specified in [MS-OXWSCORE] section 3.1.4.2.2.1, that specifies the XML request MUST contain one **AcceptSharingInvitationType** complex type element. All other elements MUST be empty.

3.1.4.2 GetFolder Operation

The **GetFolder** operation, as specified in [MS-OXWSFOLD] section 3.1.4.6, gets a shared folder so that the access permissions on a shared folder can be modified.

```
<wsdl:operation name="GetFolder">
   <wsdl:input message="tns:GetFolderSoapIn" />
   <wsdl:output message="tns:GetFolderSoapOut" />
</wsdl:operation>
```

3.1.4.3 GetSharingFolder Operation

The **GetSharingFolder** operation gets the local folder identifier of a specified shared folder.

The following is the WSDL port type specification for this operation.

```
<wsdl:operation name="GetSharingFolder">
     <wsdl:input message="tns:GetSharingFolderSoapIn"/>
     <wsdl:output message="tns:GetSharingFolderSoapOut"/>
</wsdl:operation>
```

The following is the WSDL binding specification for this operation.

```
<wsdl:operation name="GetSharingFolder">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingFolder"/>
   <wsdl:input>
      <soap:body parts="request" use="literal"/>
      <soap:header message="tns:GetSharingFolderSoapIn" part="RequestVersion" use="literal"/>
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="GetSharingFolderResult" use="literal"/>
      <soap:header message="tns:GetSharingFolderSoapOut" part="ServerVersion" use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

The **GetSharingFolder** operation returns the local folder identifier of a specified shared folder. After the local folder identifier is returned, the **RefreshSharingFolder** operation, as specified in section 3.1.4.5, is used to request that the server synchronize the shared folder information.

3.1.4.3.1 Messages

The WSDL message definitions listed in the following table are specific to this operation.

Message name	Description
GetSharingFolderSoapIn	Specifies the **SOAP message** that requests the local identifier of a shared folder.

GetSharingFolderSoapOut	Specifies the SOAP message that is returned in response.

3.1.4.3.1.1 tns:GetSharingFolderSoapIn Message

The **GetSharingFolderSoapIn** WSDL message specifies a request to the **GetSharingFolder** operation.

```
<wsdl:message name="GetSharingFolderSoapIn">
   <wsdl:part name="request" element="tns:GetSharingFolder"/>
   <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **GetSharingFolderSoapIn** WSDL message is the input message for the **SOAP action** http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingFolder.

The parts of the **GetSharingFolderSoapIn** WSDL message are listed and described in the following table.

Part name	Element/type	Description
request	**tns:GetSharingFolder** (section 3.1.4.3.2.2)	Specifies the **SOAP body** of the request for a local identifier of a shared folder.
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.4.7)	Specifies a **SOAP header** that identifies the schema version for the **GetSharingFolder** operation request.

3.1.4.3.1.2 tns:GetSharingFolderSoapOut Message

The **GetSharingFolderSoapOut** WSDL message specifies the server response to the **GetSharingFolder** operation request to return the local identifier of a shared folder.

```
<wsdl:message name="GetSharingFolderSoapOut">
   <wsdl:part name="GetSharingFolderResult" element="tns:GetSharingFolderResponse"/>
   <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **GetSharingFolderSoapOut** WSDL message is the output message for the SOAP action http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingFolder.

The parts of the **GetSharingFolderSoapOut** WSDL message are listed and described in the following table.

Part name	Element/type	Description
GetSharingFolderResult	**tns:GetSharingFolderResponse** (section 3.1.4.3.2.1)	Specifies the SOAP body of the response to a **GetSharingFolder** operation request.

Part name	Element/type	Description
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.4.8)	Specifies a SOAP header that identifies the server version for the response.

3.1.4.3.2 Elements

The XML schema element definitions listed in the following table are specific to this operation.

Element name	Description
GetSharingFolder	Specifies the base request element for the **GetSharingFolder** operation.
GetSharingFolderResponse	Specifies the response message from the **GetSharingFolder** operation.

3.1.4.3.2.1 GetSharingFolderResponse Element

The **GetSharingFolderResponse** element specifies the response message from the **GetSharingFolder** operation.

```
<xs:element name="GetSharingFolderResponse"
  type="m:GetSharingFolderResponseMessageType"
 />
```

3.1.4.3.2.2 GetSharingFolder Element

The **GetSharingFolder** element specifies the base request element for the **GetSharingFolder** operation.

```
<xs:element name="GetSharingFolder"
  type="m:GetSharingFolderType"
 />
```

3.1.4.3.3 Complex Types

The XML schema complex type definitions listed in the following table are specific to this operation.

Complex type name	Description
GetSharingFolderType	Specifies the shared folder to be returned from the **GetSharingFolder** operation.

3.1.4.3.3.1 t:GetSharingFolderType Complex Type

The **GetSharingFolderType** complex type specifies the shared folder to be returned from the **GetSharingFolder** operation.

```
<xs:complexType name="GetSharingFolderType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
      <xs:sequence>
        <xs:element name="SmtpAddress"
          type="t:NonEmptyStringType"
         />
        <xs:element name="DataType"
          type="t:SharingDataType"
          minOccurs="0"
         />
        <xs:element name="SharedFolderId"
          type="t:NonEmptyStringType"
          minOccurs="0"
         />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SmtpAddress	**t:NonEmptyStringType** ([MS-OXWSCDATA] section 2.2.2.18)	Specifies the SMTP e-mail address of the other party in the sharing relationship.
DataType	**t:SharingDataType** (section 2.2.2.1)	Specifies the type of folder to be returned. This element can be present.
SharedFolderId	**t:NonEmptyStringType**	Specifies the identifier of the shared folder for which the local folder is to be returned. This element can be present.

A **GetSharingFolderType** element MUST include either the **SmtpAddress** and **DataType** elements, or the **SharedFolderId** element. The **GetSharingFolderType** element MUST NOT contain all of those elements.

3.1.4.4 GetSharingMetadata Operation

The **GetSharingMetadata** operation gets an encrypted XML payload that identifies the participants in a shared folder exchange.

The following is the WSDL port type specification for this operation.

```
<wsdl:operation name="GetSharingMetadata">
     <wsdl:input message="tns:GetSharingMetadataSoapIn"/>
     <wsdl:output message="tns:GetSharingMetadataSoapOut"/>
</wsdl:operation>
```

The following is the WSDL binding specification for this operation.

```
<wsdl:operation name="GetSharingMetadata">
```

```
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingMetadata"/
>
   <wsdl:input>
      <soap:body parts="request" use="literal"/>
      <soap:header message="tns:GetSharingMetadataSoapIn" part="RequestVersion"
use="literal"/>
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="GetSharingMetadataResult" use="literal"/>
      <soap:header message="tns:GetSharingMetadataSoapOut" part="ServerVersion"
use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

3.1.4.4.1 Messages

The WSDL message definitions listed in the following table are specific to this operation.

Message name	Description
GetSharingMetadataSoapIn	Specifies the **SOAP message** that requests encrypted sharing data from the server.
GetSharingMetadataSoapOut	Specifies the **SOAP message** that is returned by the server in response.

3.1.4.4.1.1 tns:GetSharingMetadataSoapIn Message

The **GetSharingMetadataSoapIn** WSDL message specifies the request for an encrypted XML message that identifies the participants in a shared folder exchange.

```
<wsdl:message name="GetSharingMetadataSoapIn">
   <wsdl:part name="request" element="tns:GetSharingMetadata"/>
   <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **GetSharingMetadataSoapIn** WSDL message is the input message for the SOAP action http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingMetadata.

The parts of the **GetSharingMetadataSoapIn** WSDL message are listed and described in the following table.

Part name	Element/type	Description
request	**tns:GetSharingMetadata** (section 3.1.4.4.2.1)	Specifies the SOAP body of the request for folder sharing data.
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.4.7)	Specifies a SOAP header that identifies the schema version for the **GetSharingMetadata** operation request.

3.1.4.4.1.2 tns:GetSharingMetadataSoapOut Message

The **GetSharingMetadataSoapOut** WSDL message specifies the server response to the GetSharingMetadata operation.

```
<wsdl:message name="GetSharingMetadataSoapOut">
   <wsdl:part name="GetSharingMetadataResult" element="tns:GetSharingMetadataResponse"/>
   <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **GetSharingMetadataSoapOut** WSDL message is the output message for the SOAP action http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingMetadata.

The parts of the **GetSharingMetadataSoapOut** WSDL message are listed and described in the following table.

Part name	Element/type	Description
GetSharingMetadataResult	**tns:GetSharingMetadataResponse** (section 3.1.4.4.2.2)	Specifies the SOAP body of the response.
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.4.8)	Specifies SOAP header that identifies the server version for the response.

3.1.4.4.2 Elements

The XML schema element definitions listed in the following table are specific to this operation.

Element name	Description
GetSharingMetadata	Specifies the base request for the **GetSharingMetadata** operation.
GetSharingMetadataResponse	Specifies the response from the **GetSharingMetadata** operation.

3.1.4.4.2.1 GetSharingMetadata Element

The **GetSharingMetadata** element specifies the base request for the **GetSharingMetadata** operation.

```
<xs:element name="GetSharingMetadata"
  type="m:GetSharingMetadataType"
 />
```

3.1.4.4.2.2 GetSharingMetadataResponse Element

The **GetSharingMetadataResponse** element specifies the response from the **GetSharingMetadata** operation.

```
<xs:element name="GetSharingMetadataResponse"
  type="m:GetSharingMetadataResponseMessageType"
 />
```

3.1.4.4.3 Complex Types

The XML schema complex type definitions listed in the following table are specific to this operation.

Complex type name	Description
ArrayOfSmtpAddressType	Specifies an array of SMTP e-mail addresses.
GetSharingMetadataType	Specifies the sharing folder and recipients for the **GetSharingMetadata** operation.

3.1.4.4.3.1 t:ArrayOfSmtpAddressType Complex Type

The **ArrayOfSmtpAddressType** complex type specifies an array of SMTP e-mail addresses.

```
<xs:complexType name="ArrayOfSmtpAddressType">
  <xs:choice
    maxOccurs="unbounded"
  >
    <xs:element name="SmtpAddress"
      type="t:NonEmptyStringType"
     />
  </xs:choice>
</xs:complexType>
```

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

Element	Type	Description
SmtpAddress	**t:NonEmptyStringType** ([MS-OXWSCDATA] section 2.2.2.18)	Specifies an SMTP e-mail address.

3.1.4.4.3.2 m:GetSharingMetadataType Complex Type

The **GetSharingMetadataType** complex type specifies the sharing folder and recipients for the **GetSharingMetadata** operation. The **GetSharingMetadataType** complex type extends the **BaseRequestType** complex type, as specified in [MS-OXWSCDATA] section 2.2.3.14.

```
<xs:complexType name="GetSharingMetadataType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
      <xs:sequence>
        <xs:element name="IdOfFolderToShare"
          type="t:FolderIdType"
         />
        <xs:element name="SenderSmtpAddress"
          type="t:NonEmptyStringType"
         />
        <xs:element name="Recipients"
          type="t:ArrayOfSmtpAddressType"
```

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

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

Element	Type	Description
IdOfFolderToShare	**t:FolderIdType** ([MS-OXWSCDATA] section 2.2.3.29)	Specifies the identifier for an existing folder on the server that will be shared.
SenderSmtpAddress	**t:NonEmptyStringType** ([MS-OXWSCDATA] section 2.2.2.18)	Specifies a user e-mail address. The address MUST correspond to the **mailbox** that contains the folder that is identified in the **IdOfFolderToShare** element.
Recipients	**t:ArrayOfSmtpAddressType** (section 3.1.4.4.1.1)	Specifies the e-mail addresses of one or more entities that will be granted access to the mailbox folder.

3.1.4.5 RefreshSharingFolder Operation

The **RefreshSharingFolder** operation requests that the server synchronize shared folder information to the local sharing folder.

The following is the WSDL port type specification for this operation.

```
<wsdl:operation name="RefreshSharingFolder">
     <wsdl:input message="tns:RefreshSharingFolderSoapIn"/>
     <wsdl:output message="tns:RefreshSharingFolderSoapOut"/>
</wsdl:operation>
```

The following is the WSDL binding specification for this operation.

```
<wsdl:operation name="RefreshSharingFolder">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/RefreshSharingFolder
"/>
   <wsdl:input>
      <soap:body parts="request" use="literal"/>
      <soap:header message="tns:RefreshSharingFolderSoapIn" part="RequestVersion"
use="literal"/>
      </wsdl:input>
   <wsdl:output>
      <soap:body parts="RefreshSharingFolderResult" use="literal"/>
      <soap:header message="tns:RefreshSharingFolderSoapOut" part="ServerVersion"
use="literal"/>
   </wsdl:output>
</wsdl:operation>
```

3.1.4.5.1 Messages

The **WSDL** message definitions listed in the following table are specific to this operation.

Message name	Description
RefreshSharingFolderSoapIn	Specifies the SOAP message that requests that a local shared folder be synchronized with the remote server.
RefreshSharingFolderSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.5.1.1 tns:RefreshSharingFolderSoapIn Message

The **RefreshSharingFolderSoapIn** WSDL message specifies a request to synchronize a shared folder with a remote server.

```
<wsdl:message name="RefreshSharingFolderSoapIn">
   <wsdl:part name="request" element="tns:RefreshSharingFolder"/>
   <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **RefreshSharingFolderSoapIn** WSDL message is the input message for the SOAP action http://schemas.microsoft.com/exchange/services/2006/messages/RefreshSharingFolder.

The parts of the **RefreshSharingFolderSoapIn** WSDL message are listed and described in the following table.

Part name	Element/type	Description
request	**tns:RefreshSharingFolder** (section 3.1.4.5.2.1)	Specifies the SOAP body of the request to synchronize a shared folder.
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.4.7)	Specifies a SOAP header that identifies the schema version for the **RefreshSharingFolder** operation request.

3.1.4.5.1.2 tns:RefreshSharingFolderSoapOut Message

The **RefreshSharingFolderSoapOut** WSDL message specifies the server response to the **RefreshSharingFolder** operation.

```
<wsdl:message name="RefreshSharingFolderSoapOut">
   <wsdl:part name="RefreshSharingFolderResult"
       element="tns:RefreshSharingFolderResponse"/>
   <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **RefreshSharingFolderSoapOut** WSDL message is the output message for the SOAP action http://schemas.microsoft.com/exchange/services/2006/messages/RefreshSharingFolder.

The parts of the **RefreshSharingFolderSoapOut** WSDL message are listed and described in the following table.

Part name	Element/type	Description

Part name	Element/type	Description
RefreshSharingFolderResult	**tns:RefreshSharingFolderResponse** (section 3.1.4.5.2.2)	Specifies the SOAP body of the response to the **RefreshSharingFolder** operation.
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.4.8)	Specifies a SOAP header that identifies the server version for the response.

3.1.4.5.2 Elements

The **XML schema** element definitions listed in the following table are specific to this operation.

Element name	Description
RefreshSharingFolder	Specifies the base request for the **RefreshSharingFolder** operation.
RefreshSharingFolderResponse	Specifies the response from the **RefreshSharingFolder** operation.

3.1.4.5.2.1 RefreshSharingFolder Element

The **RefreshSharingFolder** element specifies the base request for the **RefreshSharingFolder** operation.

```
<xs:element name="RefreshSharingFolder"
  type="m:RefreshSharingFolderType"
 />
```

3.1.4.5.2.2 RefreshSharingFolderResponse Element

The **RefreshSharingFolderResponse** element specifies the response from the **RefreshSharingFolder** operation.

```
<xs:element name="RefreshSharingFolderResponse"
  type="m:RefreshSharingFolderResponseMessageType"
 />
```

3.1.4.5.3 Complex Types

The **XML schema** complex type definitions listed in the following table are specific to this operation.

Complex type name	Description
RefreshSharingFolderType	Specifies the base request for the **RefreshSharingFolder** operation.

3.1.4.5.3.1 m:RefreshSharingFolderType Complex Type

The **RefreshSharingFolderType** complex type specifies the request for the **RefreshSharingFolder** operation. The **RefreshSharingFolderType** complex type extends the **BaseRequestType** complex type, as specified in [MS-OXWSCDATA] section 2.2.3.14.

```
<xs:complexType name="RefreshSharingFolderType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
      <xs:sequence>
        <xs:element name="SharingFolderId"
          type="t:FolderIdType"
         />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SharingFolderId	**t:FolderIdType** ([MS-OXWSCDATA] section 2.2.3.29)	Specifies the local identifier of the shared folder to refresh from the associated server.

3.1.4.6 UpdateFolder Operation

The **UpdateFolder** operation, as specified in [MS-OXWSFOLD] section 3.1.4.8, updates the access permissions on a shared folder when a sharing relationship is created.

```
<wsdl:operation name="UpdateFolder">
     <wsdl:input message="tns:UpdateFolderSoapIn"/>
     <wsdl:output message="tns:UpdateFolderSoapOut"/>
</wsdl:operation>
```

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

4.1 GetSharingMetadata Request

The following XML example is a request to the **GetSharingMetadata** operation, as described in section 3.1.4.4. The **Id** attribute of the **IdOfFolderToShare** element has been shortened for readability.

```
<q:Envelope xmlns:ext="http://schemas.microsoft.com/exchange/services/2006/types"
   xmlns:exm="http://schemas.microsoft.com/exchange/services/2006/messages"
   xmlns:q="http://schemas.xmlsoap.org/soap/envelope/">
  <q:Header>
    <ext:RequestServerVersion Version="Exchange2010"></ext:RequestServerVersion>
  </q:Header>
  <q:Body>
    <exm:GetSharingMetadata>
      <exm:IdOfFolderToShare Id="AAMkADc1YjI="/>
      <exm:SenderSmtpAddress>user1@contoso.com</exm:SenderSmtpAddress>
      <exm:Recipients>
        <ext:SmtpAddress>user2@contoso.com</ext:SmtpAddress>
      </exm:Recipients>
    </exm:GetSharingMetadata>
  </q:Body>
</q:Envelope>
```

4.2 GetSharingMetadata Response

The following XML example is the response from the **GetSharingMetadata** operation, as described in section 3.1.4.4. The contents of the **KeyIdentifier**, **CypherValue**, and **CypherData** elements has been shortened for readability.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <h:ServerVersionInfo MajorVersion="14" MinorVersion="1" MajorBuildNumber="225"
MinorBuildNumber="45" Version="Exchange2010_SP1"
xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"/>
  </s:Header>
  <s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <GetSharingMetadataResponse ResponseClass="Success"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <ResponseCode>NoError</ResponseCode>
      <EncryptedSharedFolderDataCollection>
        <EncryptedSharedFolderData
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <Token>
            <EncryptedData Id="Assertion0" Type="http://www.w3.org/2001/04/xmlenc#Element"
xmlns="http://www.w3.org/2001/04/xmlenc#">
              <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#tripledes-
cbc"></EncryptionMethod>
              <ds:KeyInfo xmlns:ds="http://www.w3.org/2000/09/xmldsig#">
                <EncryptedKey>
                  <EncryptionMethod Algorithm="http://www.w3.org/2001/04/xmlenc#rsa-oaep-
mgf1p"></EncryptionMethod>
                  <ds:KeyInfo Id="keyinfo">
                    <wsse:SecurityTokenReference xmlns:wsse="http://docs.oasis-
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd">
```

```
                    <wsse:KeyIdentifier
                       EncodingType="http://docs.oasis-
                                     open.org/wss/2004/01/oasis-200401-wss-soap-
                                     message-security-1.0#Base64Binary"
                       ValueType="http://docs.oasis-open.org/wss/2004/01/oasis-
                                  200401-wss-x509-token-profile-
                                  1.0#X509SubjectKeyIdentifier">
                        nR+jNSYQR9eSkgOpEog/xQ==</wsse:KeyIdentifier>
                  </wsse:SecurityTokenReference>
                </ds:KeyInfo>
                <CipherData>
                  <CipherValue>arNGOQ+nYwa/…==</CipherValue>
                </CipherData>
              </EncryptedKey>
            </ds:KeyInfo>
            <CipherData>
              <CipherValue>KhP6tqH4…=</CipherValue>
            </CipherData>
          </EncryptedData>
        </Token>
        <Data>
          <EncryptedData Type="http://www.w3.org/2001/04/xmlenc#Element"
                         xmlns="http://www.w3.org/2001/04/xmlenc#">
            <EncryptionMethod
              Algorithm="http://www.w3.org/2001/04/xmlenc#aes256-cbc"/>
            <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
              <EncryptedKey xmlns="http://www.w3.org/2001/04/xmlenc#">
                <EncryptionMethod
                  Algorithm="http://www.w3.org/2001/04/xmlenc#kw-tripledes"/>
                <KeyInfo xmlns="http://www.w3.org/2000/09/xmldsig#">
                  <KeyName>key</KeyName>
                </KeyInfo>
                <CipherData>
                  <CipherValue>
                   SqPZz6UU…
                  </CipherValue>
                </CipherData>
              </EncryptedKey>
            </KeyInfo>
            <CipherData>
              <CipherValue>+QXPTi49k…=</CipherValue>
            </CipherData>
          </EncryptedData>
        </Data>
      </EncryptedSharedFolderData>
    </EncryptedSharedFolderDataCollection>
    <InvalidRecipients/>
  </GetSharingMetadataResponse>
 </s:Body>
</s:Envelope>
```

5 Security

5.1 Security Considerations for Implementers

This protocol does not use any additional security mechanisms.

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-OXWSMSHR.wsdl	Contains the WSDL for the implementation of this protocol.	6
MS-OXWSMSHR-messages.xsd	Contains the XML schema message definitions that are used in this protocol.	7.1
MS-OXWSMSHR-types.xsd	Contains the XML schema type definitions that are used in this protocol.	7.2
MS-OXWSCORE-messages.xsd	Contains XML schema message definitions that are referred to by this protocol.	[MS-OXWSCORE] section 7.1
MS-OXWSFOLD-types.xsd	Contains XML schema type definitions that are referred to by this protocol.	[MS-OXWSFOLD] section 7.2

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are referenced in XML **include** or **import** elements by the MS-OXWSMSHR-types.xsd or MS-OXWSMSHR-messages.xsd schemas have to be placed in the common folder.

This section contains the contents of the MS-OXWSMSHR.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:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
<!--
      <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="MS-OXWSMSHR-types.xsd"/>-->
      <!-- Add global elements and types from messages.xsd -->
        <xs:include schemaLocation="MS-OXWSMSHR-messages.xsd"/>
        <xs:include schemaLocation="MS-OXWSCORE-messages.xsd"/>
        <xs:include schemaLocation="MS-OXWSFOLD-messages.xsd"/>

    </xs:schema>
    <xs:schema id="types" elementFormDefault="qualified" version="Exchange2013"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns="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">
      <xs:import namespace="http://www.w3.org/XML/1998/namespace"/>
      <!-- Add global elements and types from types.xsd -->
    </xs:schema>
  </wsdl:types>
  <wsdl:portType name="ExchangeServicePortType">
    <wsdl:operation name="GetSharingMetadata">
```

```
      <wsdl:input message="tns:GetSharingMetadataSoapIn"/>
      <wsdl:output message="tns:GetSharingMetadataSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="RefreshSharingFolder">
      <wsdl:input message="tns:RefreshSharingFolderSoapIn"/>
      <wsdl:output message="tns:RefreshSharingFolderSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="GetSharingFolder">
      <wsdl:input message="tns:GetSharingFolderSoapIn"/>
      <wsdl:output message="tns:GetSharingFolderSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="CreateItem">
      <wsdl:input message="tns:CreateItemSoapIn"/>
      <wsdl:output message="tns:CreateItemSoapOut"/>
    </wsdl:operation>
    <wsdl:operation name="UpdateFolder">
      <wsdl:input message="tns:UpdateFolderSoapIn"/>
      <wsdl:output message="tns:UpdateFolderSoapOut"/>
    </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="GetSharingMetadata">
      <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingMetadata"/
>
      <wsdl:input>
        <soap:body parts="request" use="literal"/>
        <soap:header message="tns:GetSharingMetadataSoapIn" part="RequestVersion"
use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body parts="GetSharingMetadataResult" use="literal"/>
        <soap:header message="tns:GetSharingMetadataSoapOut" part="ServerVersion"
use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <!-- RefreshSharingFolder -->
    <wsdl:operation name="RefreshSharingFolder">
      <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/RefreshSharingFolder
"/>
      <wsdl:input>
        <soap:body parts="request" use="literal"/>
        <soap:header message="tns:RefreshSharingFolderSoapIn" part="RequestVersion"
use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body parts="RefreshSharingFolderResult" use="literal"/>
        <soap:header message="tns:RefreshSharingFolderSoapOut" part="ServerVersion"
use="literal"/>
      </wsdl:output>
    </wsdl:operation>
    <!-- GetSharingFolder -->
    <wsdl:operation name="GetSharingFolder">
      <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetSharingFolder"/>
      <wsdl:input>
        <soap:body parts="request" use="literal"/>
        <soap:header message="tns:GetSharingFolderSoapIn" part="RequestVersion"
use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body parts="GetSharingFolderResult" use="literal"/>
```

```
        <soap:header message="tns:GetSharingFolderSoapOut" 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="UpdateFolder">
      <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/UpdateFolder"/>
      <wsdl:input>
        <soap:header message="tns:UpdateFolderSoapIn" part="Impersonation" use="literal"/>
        <soap:header message="tns:UpdateFolderSoapIn" part="MailboxCulture" use="literal"/>
        <soap:header message="tns:UpdateFolderSoapIn" part="RequestVersion" use="literal"/>
        <soap:header message="tns:UpdateFolderSoapIn" part="TimeZoneContext" use="literal"/>
        <soap:body parts="request" use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body parts="UpdateFolderResult" use="literal"/>
        <soap:header message="tns:UpdateFolderSoapOut" part="ServerVersion" use="literal"/>
      </wsdl:output>
    </wsdl:operation>
  </wsdl:binding>
  <wsdl:message name="UpdateFolderSoapIn">
    <wsdl:part name="request" element="tns:UpdateFolder"/>
    <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="UpdateFolderSoapOut">
    <wsdl:part name="UpdateFolderResult" element="tns:UpdateFolderResponse"/>
    <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="GetSharingMetadataSoapIn">
    <wsdl:part name="request" element="tns:GetSharingMetadata"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
  </wsdl:message>
  <wsdl:message name="GetSharingMetadataSoapOut">
    <wsdl:part name="GetSharingMetadataResult" element="tns:GetSharingMetadataResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
  </wsdl:message>
  <wsdl:message name="RefreshSharingFolderSoapIn">
    <wsdl:part name="request" element="tns:RefreshSharingFolder"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
```

```
  </wsdl:message>
  <wsdl:message name="RefreshSharingFolderSoapOut">
    <wsdl:part name="RefreshSharingFolderResult" element="tns:RefreshSharingFolderResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
  </wsdl:message>
  <wsdl:message name="GetSharingFolderSoapIn">
    <wsdl:part name="request" element="tns:GetSharingFolder"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
  </wsdl:message>
  <wsdl:message name="GetSharingFolderSoapOut">
    <wsdl:part name="GetSharingFolderResult" element="tns:GetSharingFolderResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
  </wsdl:message>
</wsdl:definitions>
```

7 Appendix B: Full XML Schema

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

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

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

7.1 Messages Schema

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

MS-OXWSMSHR-messages.xsd references the files listed in the following table. For the schema file to operate correctly, these files have to be in the folder that contains the WSDL, types schema, and messages schema files for this protocol.

File name	Defined in
MS-OXWSCDATA-messages.xsd	[MS-OXWSCDATA] section 7.1
MS-OXWSMSHR-types.xsd	7.2

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages"
elementFormDefault="qualified" version="Exchange2013" id="messages">

  <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="MS-OXWSMSHR-types.xsd"/>
<xs:include schemaLocation="MS-OXWSCDATA-messages.xsd"/>

  <xs:complexType name="GetSharingFolderType">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="SmtpAddress" type="t:NonEmptyStringType"/>
          <xs:element name="DataType" type="t:SharingDataType" minOccurs="0"/>
          <xs:element name="SharedFolderId" type="t:NonEmptyStringType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GetSharingFolder" type="m:GetSharingFolderType"/>
  <xs:complexType name="GetSharingFolderResponseMessageType">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType">
        <xs:sequence minOccurs="0">
          <xs:element name="SharingFolderId" type="t:FolderIdType"/>
        </xs:sequence>
      </xs:extension>
```

```
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GetSharingFolderResponse" type="m:GetSharingFolderResponseMessageType"/>
  <xs:complexType name="GetSharingMetadataType">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="IdOfFolderToShare" type="t:FolderIdType"/>
          <xs:element name="SenderSmtpAddress" type="t:NonEmptyStringType"/>
          <xs:element name="Recipients" type="t:ArrayOfSmtpAddressType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GetSharingMetadata" type="m:GetSharingMetadataType"/>
  <xs:complexType name="GetSharingMetadataResponseMessageType">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType">
        <xs:sequence minOccurs="0">
          <xs:element name="EncryptedSharedFolderDataCollection"
type="t:ArrayOfEncryptedSharedFolderDataType"/>
          <xs:element name="InvalidRecipients" type="t:ArrayOfInvalidRecipientsType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GetSharingMetadataResponse"
type="m:GetSharingMetadataResponseMessageType"/>
  <xs:complexType name="RefreshSharingFolderType">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="SharingFolderId" type="t:FolderIdType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="RefreshSharingFolder" type="m:RefreshSharingFolderType"/>
  <xs:complexType name="RefreshSharingFolderResponseMessageType">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType"/>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="RefreshSharingFolderResponse"
type="m:RefreshSharingFolderResponseMessageType"/>
</xs:schema>
```

7.2 Types Schema

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

MS-OXWSMSHR-types.xsd references the file listed in the following table. For the schema file 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="ArrayOfSmtpAddressType">
    <xs:choice maxOccurs="unbounded">
      <xs:element name="SmtpAddress" type="t:NonEmptyStringType"/>
    </xs:choice>
  </xs:complexType>
  <xs:complexType name="ArrayOfEncryptedSharedFolderDataType">
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element name="EncryptedSharedFolderData" type="t:EncryptedSharedFolderDataType"/>
    </xs:choice>
  </xs:complexType>
  <xs:complexType name="EncryptedSharedFolderDataType">
    <xs:sequence>
      <xs:element name="Token" type="t:EncryptedDataContainerType"/>
      <xs:element name="Data" type="t:EncryptedDataContainerType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="EncryptedDataContainerType">
    <xs:sequence>
      <xs:any namespace="##other" processContents="skip"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="ArrayOfInvalidRecipientsType">
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element name="InvalidRecipient" type="t:InvalidRecipientType"/>
    </xs:choice>
  </xs:complexType>
  <xs:complexType name="InvalidRecipientType">
    <xs:sequence>
      <xs:element name="SmtpAddress" type="t:NonEmptyStringType"/>
      <xs:element name="ResponseCode" type="t:InvalidRecipientResponseCodeType"/>
      <xs:element name="MessageText" type="xs:string" minOccurs="0"/>
    </xs:sequence>
  </xs:complexType>
  <xs:simpleType name="InvalidRecipientResponseCodeType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="RecipientOrganizationNotFederated"/>
      <xs:enumeration value="CannotObtainTokenFromSTS"/>
      <xs:enumeration value="SystemPolicyBlocksSharingWithThisRecipient"/>
      <xs:enumeration value="RecipientOrganizationFederatedWithUnknownTokenIssuer"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="SharingSecurity" type="t:EncryptedDataContainerType"/>
  <xs:simpleType name="SharingDataType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Calendar"/>
      <xs:enumeration value="Contacts"/>
    </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 2010
- Microsoft Exchange Server 2013
- Microsoft Outlook 2010
- Microsoft Outlook 2013
- Microsoft Outlook 2016 Preview

Exceptions, if any, are noted below. If a service pack or Quick Fix Engineering (QFE) number appears with the product version, behavior changed in that service pack or QFE. The new behavior also applies to subsequent service packs of the product unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

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

9 Change Tracking

This section identifies changes that were made to this document since the last release. 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.
- The removal of a document from the documentation set.

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 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 changes were introduced. Minor editorial and formatting changes may have been made, but the technical content of the document is identical to the last released version.

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.
- 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 dochelp@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
8 Appendix C: Product Behavior	Updated list of supported products.	Y	Content updated due to protocol revision.

10 Index

P

R

S

T

V

W

X