[MS-OXWSMSHR]:
Folder Sharing 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's Open Specification Promise (available here: http://www.microsoft.com/interop/osp) or the Community Promise (available here: http://www.microsoft.com/interop/cp/default.mspx). 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
11/04/2009	1.0	Major	Initial availability.
02/10/2010	1.1.0	Minor	Updated the technical content.
05/05/2010	1.1.1	Editorial	Revised and edited the technical content.
08/04/2010	2.0	Major	Significantly changed the technical content.

Contents

1 Introduction

This document specifies the Folder Sharing Web Service protocol, which is responsible for managing **Calendar folders** that are shared between users in separate organizations. Clients use the Folder Sharing Web Service protocol to share **folders**, get **shared folders**, and update shared folders. Clients use the SOAP [SOAP1.1] protocol to contact the folder sharing service.

1.1 Glossary

The following terms are defined in [MS-OXGLOS]:

Calendar folder
folder
Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)
mailbox
shared folder
Simple Mail Transfer Protocol (SMTP)
SOAP body
SOAP fault
SOAP header
SOAP message
store
Web Services Description Language (WSDL)
WSDL message
WSDL port type
XML
XML namespace
XML schema

The following terms are specific to this document:

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

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

1.2 References

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

[MS-OXSHRMSG] Microsoft Corporation, "Sharing Message Attachment Schema", November 2009.

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

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

[MS-OXWSFOLD] Microsoft Corporation, "Folders and Folder Permissions Web Service Protocol Specification", July 2009.

[MS-OXWSLVID] Microsoft Corporation, "Federated Internet Authentication Web Service Protocol Specification", November 2009.

[MS-OXWSSYNC] Microsoft Corporation, "Mailbox Contents Synchronization Web Service Protocol Specification", July 2009.

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

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

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

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

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

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

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

1.2.2 Informative References

[MS-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary", April 2008.

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 to create an opaque data structure that authorizes sharing, getting shared folder information, and initiating synchronization of shared folders.

The Folder Sharing Web Service protocol uses a sharing message, as defined in [MS-OXSHRMSG], to establish folder sharing. The **GetSharingMetadata** operation (section 3.1.4.4) gets the **EncryptedSharedFolderDataType** complex type (section 2.2.3.4) elements that are required to populate the <SharingMessage> element (section 2.3.6) in the **XML** sharing message, as specified in [MS-OXSHRMSG] section 2.3.6.

The Folder Sharing Web Service 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 (section 3.1.4.4) to get an opaque authentication token that identifies the sharing invitation.
- Construct a Sharing Message Metadata XML document, as specified in [MS-OXSHRMSG], from the response from the **GetSharingMetadata** operation (section 3.1.4.4). The <EncryptedSharedFolderDataCollection> element of the <GetSharingMetaDataResponse> (section 2.2.3.4) element is inserted into the Sharing Message Metadata XML document as the <EncryptedSharedFolderDataCollection> element of the <ProvidersType> 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 Metadata 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 (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 (section 3.1.4.5) with the local sharing folder identifier that is returned by the **GetSharingFolder** operation (section 3.1.4.3).

1.4 Relationship to Other Protocols

The Folder Sharing Web Service protocol uses SOAP over **HTTPS** [RFC2818], as shown in the following figure.

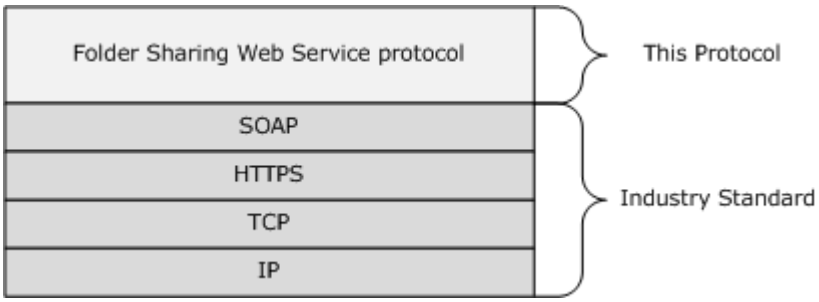

Figure 1: Folder Sharing Web Service protocol HTTPS stack

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 sharing folder.
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 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 [MS-OXWSSYNC] operations to synchronize the local shared folder on the server with the client's local data store.
Federated Internet Authentication Web Service protocol [MS-OXWSLVID]	Servers can use Federated Internet Authentication Web Service protocol [MS-OXWSLVID] client operations to obtain authentication tokens to establish sharing relationships between users.

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

The Folder Sharing Web Service protocol is applicable to SOAP-based clients [SOAP1.1].

1.7 Versioning and Capability Negotiation

This document covers versioning in the following areas:

- **Supported Transports:** This protocol uses [SOAP1.1], as specified in section 2.1.
- **Protocol Versions:** This protocol specifies only one **WSDL port type** version.
- **Security and Authentication Methods:** This protocol relies on the Web server that is hosting it to perform authentication.
- **Capability Negotiation:** None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The SOAP version supported is SOAP 1.1. For details, see [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** 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	[MS-OXWSMSHR]
s	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]
targetNamespace	http://schemas.microsoft.com/exchange/services/2006/messages	[MS-OXWSMSHR]
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
t	http:/./schemas.microsoft.com/exchange/services/2006/types	[MS-OXWSMSHR]

2.2.2 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 (section 2.2.2.1)	Specifies the type of data that is shared by a shared folder.
InvalidRecipientResponseCodeType (section 2.2.2.2)	Specifies the reason why a recipient of a folder sharing request was invalid.

2.2.2.1 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>
```

Enumeration

The following values are defined by the simple type:

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

2.2.2.2 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>
```

Enumeration

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 token server.

Value	Description
RecipientOrganizationNotFederated	Specifies that a sharing relationship is not available 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.

2.2.3 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 (section 2.2.3.1)	Specifies the response from the **GetSharingFolder** operation (section 3.1.4.3).
GetSharingMetadataResponseMessageType (section 2.2.3.2)	Specifies the response message from the **GetSharingMetadata** operation (section 3.1.4.4).
RefreshSharingFolderResponseMessageType (section 2.2.3.3)	Specifies the response message from the **RefreshSharingFolder** operation (section 3.1.4.5).
ArrayOfEncryptedSharedFolderDataType (section 2.2.3.4)	Specifies an array of encrypted folder data that is passed between servers by the client.
ArrayOfInvalidRecipientsType (section 2.2.3.5)	Specifies a list of sharing request recipients with whom a sharing relationship could not be created.
EncryptedDataContainerType (section 2.2.3.6)	Specifies an opaque container for encrypted data passed between servers by the client.
EncryptedSharedFolderDataType (section 2.2.3.7)	Specifies encrypted folder information that is passed between servers by the client.
InvalidRecipientType (section 2.2.3.8)	Specifies a recipient with whom a sharing relationship could not be created.

2.2.3.1 m:GetSharingFolderResponseMessageType Complex Type

The **GetSharingFolderResponseMessageType** complex type specifies the response message from the **GetSharingFolder** operation (section 3.1.4.3). The **GetSharingFolderResponseMessageType** complex type extends the **ResponseMessageType** complex type ([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>
```

Child Elements

Element	Type	Description
SharingFolderId	t:FolderIdType	Specifies the local folder identifier for a shared folder.

2.2.3.2 m:GetSharingMetadataResponseMessageType Complex Type

The **GetSharingMetadataResponseMessageType** complex type specifies the response message from the **GetSharingMetadata** operation (section 3.1.4.4). The **GetSharingMetadataResponseMessageType** complex type extends the **ResponseMessageType** complex type ([MS-OXWSCORE] 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>
```

Child Elements

Element	Type	Description
EncryptedSharedFolderDataCollection	**t:ArrayOfEncryptedSharedFolderDataType**	Specifies an encrypted payload from the server.
InvalidRecipients	**t:ArrayOfInvalidRecipientsType**	Specifies

Element	Type	Description
		recipients that belong to an organization that does not enable sharing.

2.2.3.3 m:RefreshSharingFolderResponseMessageType Complex Type

The **RefreshSharingFolderResponseMessageType** complex type specifies the response from the **RefreshSharingFolder** operation (section 3.1.4.5). The **RefreshSharingFolderResponseMessageType** complex type extends the **ResponseMessageType** complex type ([MS-OXWSCDATA] section 2.2.3.52).

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

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

Child Elements

Element	Type	Description
EncryptedSharedFolderData	t:EncryptedSharedFolderDataType	Specifies zero or more encrypted shared folder data items.

2.2.3.5 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>
```

Child Elements

Element	Type	Description
InvalidRecipient	t:InvalidRecipientType	Specifies a recipient whose organization is not enabled for folder sharing.

2.2.3.6 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>
```

2.2.3.7 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>
```

Child Elements

Element	Type	Description
Token	t:EncryptedDataContainerType	Specifies an identification token.
Data	t:EncryptedDataContainerType	Specifies the encrypted data.

2.2.3.8 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>
```

Child Elements

Element	Type	Description
SmtpAddress	t:NonEmptyStringType	Specifies the SMTP e-mail address of the recipient.
ResponseCode	t:InvalidRecipientResponseCodeType	Specifies the reason why the recipient is invalid.
MessageText	xs:string	Specifies the text of an error message. Can be present.

2.2.4 Elements

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

2.2.5 Attributes

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

2.2.6 Groups

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

2.2.7 Attribute Groups

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

2.2.8 Messages

This specification does not define any common **XML schema** message 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

The Folder Sharing Web Service protocol defines a single port type with five operations.

Operation	Description
CreateItem	Creates a shared folder. The **CreateItem** operation is defined in [MS-OXWSCORE] section 3.1.4.2.
GetFolder	Gets the current permissions of the shared folder.
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.
UpdateFolder	Updates a specified shared folder. The **UpdateFolder** operation is defined in [MS-OXWSFOLD] section 3.1.4.8.

3.1.1 Abstract Data Model

The Folder Sharing Web Service protocol is a stateless protocol.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

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

Operation	Description
GetSharingFolder (section 3.1.4.3)	Gets the folder identifier of a specified shared folder.
GetSharingMetadata (section 3.1.4.4)	Requests an encrypted XML payload that identifies the participants in a shared folder exchange.
RefreshSharingFolder (section 3.1.4.5)	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 3.1.4.1	Creates a folder sharing response message.
GetFolder	[MS-OXWSFOLD] section 3.1.4.6	Gets a folder so that the access permissions can be changed.
UpdateFolder	[MS-OXWSFOLD] section 3.1.4.8	Updates the access permissions on the folder to enable folder sharing.

3.1.4.1 CreateItem

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

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

Request

Message Format	Description
tns:CreateItemSoapIn	Specifies the **SOAP message** that defines the item to create. The <Items> child element of the <CreateItem> child element ([MS-OXWSCORE] section 3.1.4.2.2.1) that specifies the XML request MUST contain one **AcceptSharingInvitationType** complex type ([MS-OXWSCDATA] section 2.2.3.3) element. All other elements MUST be empty.

Response

Message Format	Description
tns:CreateItemSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.2 GetFolder

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.

Request

Message Format	Description
tns:GetFolderSoapIn	Specifies the SOAP message that gets folders from the server store.

Response

Message Format	Description
tns:GetFolderSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.3 GetSharingFolder

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

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

Request

Message Format	Description
tns:GetSharingFolderSoapIn	Defines the SOAP message that specifies the local folder to return.

Response

Message Format	Description
tns:GetSharingFolderSoapOut	Defines the SOAP message that returns the shared folder.

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 Complex Types

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

3.1.4.3.1.1 t:GetSharingFolderType Complex Type

The **GetSharingFolderType** complex type specifies the shared folder to return from the **GetSharingFolder** operation (section 3.1.4.3).

```
<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>
```

Child Elements

Element	Type	Description
SmtpAddress	t:NonEmptyStringType	Specifies the SMTP e-mail address of the other party in the sharing relationship.
DataType	t:SharingDataType	Specifies the type of folder to return. Can be present.
SharedFolderId	t:NonEmptyStringType	Specifies the identifier of the shared folder the local folder for which is to be returned. Can be present.

A **GetSharingFolderType** element MUST include either the <SmtpAddress> and <DataType> elements, or the <SharedFolderId> element. The **GetSharingFolderType** element MUST NOT contain both.

3.1.4.3.2 Elements

The following **XML schema** element definitions are specific to this operation.

3.1.4.3.2.1 GetSharingFolderResponse Element

The <GetSharingFolderResponse> element specifies the response message from the **GetSharingFolder** operation (section 3.1.4.3).

```
<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 (section 3.1.4.3).

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

3.1.4.3.3 Messages

The following **WSDL** message definitions are specific to this operation.

3.1.4.3.3.1 tns:GetSharingFolderSoapIn Message

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

Part Name	Element/Type	Description
Request	tns:GetSharingFolder	Specifies the request.
RequestVersion	t:RequestServerVersion	Specifies the schema version for the **GetSharingFolder** operation (section 3.1.4.3) request.

3.1.4.3.3.2 tns:GetSharingFolderSoapOut Message

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

Part Name	Element/Type	Description
GetSharingFolderResult	tns:GetSharingFolderResponse	Specifies the response.
ServerVersion	t:ServerVersionInfo	Specifies the server version for the response.

3.1.4.4 GetSharingMetadata

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

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

Request

Message Format	Description
tns:GetSharingMetadataSoapIn	Specifies the SOAP message that requests the folder sharing metadata.

Response

Message Format	Description
tns:GetSharingMetadataSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.4.1 Complex Types

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

3.1.4.4.1.1 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>
```

Child Elements

Element	Type	Description
SmtpAddress	t:NonEmptyStringType	Specifies an SMTP e-mail address.

3.1.4.4.1.2 m:GetSharingMetadataType Complex Type

The **GetSharingMetadataType** complex type specifies the sharing folder and recipients for the **GetSharingMetadata** operation (section 3.1.4.4). The **GetSharingMetadataType** complex type extends the **BaseRequestType** complex type ([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>
```

Child Elements

Element	Type	Description
IdOfFolderToShare	t:FolderIdType	Specifies the identifier for an existing folder on the server that will be shared.
SenderSmtpAddress	t:NonEmptyStringType	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	Specifies the e-mail addresses of one or more entities that will be granted access to the mailbox

Element	Type	Description
		folder.

3.1.4.4.2 Elements

The following **XML schema** element definitions are specific to this operation.

3.1.4.4.2.1 GetSharingMetadata Element

The <GetSharingMetadata> element specifies the base request for the **GetSharingMetadata** operation (section 3.1.4.4).

```
<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 (section 3.1.4.4).

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

3.1.4.4.3 Messages

The following **WSDL** message definitions are specific to this operation.

3.1.4.4.3.1 tns:GetSharingMetadataSoapIn Message

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

Part Name	Element/Type	Description
request	tns:GetSharingMetadata	Specifies the request.
RequestVersion	t:RequestServerVersion	Specifies the schema version for the **GetSharingMetadata** operation (section 3.1.4.4) request.

3.1.4.4.3.2 tns:GetSharingMetadataSoapOut Message

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

Part Name	Element/Type	Description
GetSharingMetadataResult	tns:GetSharingMetadataResponse	Specifies the response.

Part Name	Element/Type	Description
ServerVersion	t:ServerVersionInfo	Specifies the server version for the response.

3.1.4.5 RefreshSharingFolder

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

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

Request

Message Format	Description
tns:RefreshSharingFolderSoapIn	Defines the SOAP message that specifies the shared folder to refresh.

Response

Message Format	Description
tns:RefreshSharingFolderSoapOut	Defines the SOAP message that specifies the response.

3.1.4.5.1 Complex Types

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

3.1.4.5.1.1 m:RefreshSharingFolderType Complex Type

The **RefreshSharingFolderType** complex type specifies the request for the **RefreshSharingFolder** operation (section 3.1.4.5). The **RefreshSharingFolderType** complex type extends the **BaseRequestType** complex type ([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>
```

Child Elements

Element	Type	Description
SharingFolderId	t:FolderIdType	Specifies the local identifier of the sharing folder to refresh from the associated server.

3.1.4.5.2 Elements

The following **XML schema** element definitions are specific to this operation.

3.1.4.5.2.1 RefreshSharingFolder Element

The <RefreshSharingFolder> element specifies the base request for the **RefreshSharingFolder** operation (section 3.1.4.5).

```
<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 (section 3.1.4.5).

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

3.1.4.5.3 Messages

The following **WSDL** message definitions are specific to this operation.

3.1.4.5.3.1 tns:RefreshSharingFolderSoapIn Message

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

Part Name	Element/Type	Description
request	tns:RefreshSharingFolder	Specifies the request.
RequestVersion	t:RequestServerVersion	Specifies the schema version for the **RefreshSharingFolder** operation (section 3.1.4.5) request.

3.1.4.5.3.2 tns:RefreshSharingFolderSoapOut Message

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

Part Name	Element/Type	Description
RefreshSharingFolderResult	**tns:RefreshSharingFolderResponse**	Specifies the response.
ServerVersion	t:ServerVersionInfo	Specifies the server version for the response.

3.1.4.6 UpdateFolder

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>
```

Request

Message Format	Description
tns:UpdateFolderSoapIn	Specifies the SOAP message that modifies properties of an existing item in the server **store**.

Response

Message Format	Description
tns:UpdateFolderSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

3.2 Client 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.

3.2.1 Abstract Data Model

None.

3.2.2 Timers

None.

3.2.3 Initialization

None.

3.2.4 Message Processing Events and Sequencing Rules

None.

3.2.5 Timer Events

None.

3.2.6 Other Local Events

None.

4 Protocol Examples

None.

5 Security

5.1 Security Considerations for Implementers

The Folder Sharing Web Service 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.	6.1
MS-OXWSMSHR-types.xsd	Contains the XML schema type definitions that are used in this protocol.	6.2
MS-OXWSMSHR-messages.xsd	Contains the XML schema message definitions that are used in this protocol.	6.3

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.

6.1 WSDL

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

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

File name	Defining specification
MS-OXWSCORE-messages.xsd	[MS-OXWSCORE] section 6.3
MS-OXWSFOLD-messages.xsd	[MS-OXWSFOLD] section 6.3

```
<?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="Exchange2010"
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="Exchange2010"
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>
```

6.2 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 6.3

```
<?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="Exchange2010" 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>
```

6.3 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 6.2
MS-OXWSMSHR-types.xsd	Section 6.2

```
<?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="Exchange2010" 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 Appendix B: Product Behavior

The information in this specification is applicable to the following Microsoft products:

- Microsoft® Exchange Server 2010

Exceptions, if any, are noted below. If a service pack number appears with the product version, behavior changed in that service pack. The new behavior also applies to subsequent service packs of the product unless otherwise specified. 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 prescribed using the terms SHOULD or SHOULD NOT implies product behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that product does not follow the prescription.

8 Change Tracking

This section identifies changes that were made to the [MS-OXWSMSHR] protocol document between the May 2010 and August 2010 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

The revision class **Major** means that the technical content in the document was significantly revised. Major changes affect protocol interoperability or implementation. Examples of major changes are:

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- The removal of a document from the documentation set.
- Changes made for template compliance.

The revision class **Minor** means that the meaning of the technical content was clarified. Minor changes do not affect protocol interoperability or implementation. Examples of minor changes are updates to clarify ambiguity at the sentence, paragraph, or table level.

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

- New content added.
- Content updated.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.

- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.
- Content removed for template compliance.
- Obsolete document removed.

Editorial changes are always classified with the change type "Editorially updated."

Some important terms used in the change type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

The changes made to this document are listed in the following table. For more information, please contact protocol@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1.2.1 Normative References	55751 Moved [MS-OXGLOS] from Normative References section to Informative References section.	N	Content update.
1.2.1 Normative References	Removed reference to [RFC2396].	N	Content update.
1.2.1 Normative References	Removed reference to [RFC2616].	N	Content update.
6 Appendix A: Full WSDL	56421 Clarified the use of XML <import> and <include> elements.	N	Content update.
6.1 WSDL	56421 Updated the text to clarify that the files listed are referenced by the WSDL file.	N	Content update.
6.2 Types Schema	56421 Updated the text to clarify that the file listed is referenced by the types schema file.	N	Content update.
6.2 Types Schema	56022 Updated the contents of the XSD file.	Y	Content update.
6.3 Messages	56421 Updated the text to clarify that the files listed are referenced	N	Content update.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
Schema	by the messages schema file. Added an additional file to the list of files.		

9 Index