

[MS-OXWSMSHR]: Folder Sharing Web Service Protocol Specification

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Revision Summary

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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-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)", June 2008.

[MS-OXSHRMSG] Microsoft Corporation, "[Sharing Message 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](#)", July 2009.

[MS-OXWSSYNC] Microsoft Corporation, "[Mailbox Contents Synchronization 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>.

[RFC2396] Berners-Lee, T., Fielding, R., and Masinter, L., "Uniform Resource Identifiers (URI): Generic Syntax", RFC 2396, August 1998, <http://www.ietf.org/rfc/rfc2396.txt>.

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

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

[SOAP1.1] Box, D., 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] World Wide Web Consortium, "Namespaces in XML 1.0 (Second Edition)", August 2006, <http://www.w3.org/TR/REC-xml-names/>.

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

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

1.2.2 Informative References

None.

1.3 Protocol 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 <GetSharingMetaDataSet> (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 3.1.4.5, to get the permission list for the shared folder.
- Use the **UpdateFolder** operation, as specified in [MS-OXWSFOLD] section 3.1.4.7, 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-OXCDATA] 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**, as shown in the following figure.

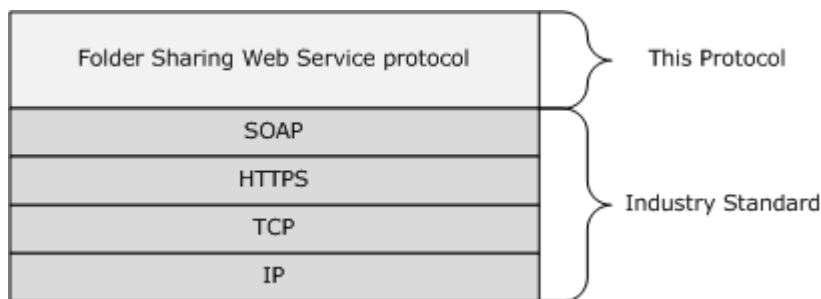


Figure 1: Folder Sharing Web Service protocol HTTPS stack

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 3.1.4.5) to retrieve information about folders to be shared and the UpdateFolder operation ([MS-OXWSFOLD] section 3.1.4.7) 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).
GetSharingMeta data Response MessageType (section 2.2.3.2)	Specifies the response message from the GetSharingMeta data 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.
EncryptedData ContainerType (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="t:ArrayOfEncryptedSharedFolderDataType">
  <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 3.1.4.7.

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 defines 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	Protocol	Description
CreateItem	[MS-OXWSCORE] section 3.1.4.1	Creates a folder sharing response message.
GetFolder	[MS-OXWSFOLD] section 3.1.4.5	Gets a folder so that the access permissions can be changed.
UpdateFolder	[MS-OXWSFOLD] section 3.1.4.7	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 3.1.4.5, 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="SmtAddress"
          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
SmtAddress	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 <SmtAddress> 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:ArrayOfSmtptAddressType Complex Type

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

```
<xs:complexType name="ArrayOfSmtptAddressType">
  <xs:choice
    minOccurs="1"
    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 3.1.4.7, 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 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.

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 includes 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>
  </wsdl:types>
</wsdl:definitions>
```

```

    <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 includes 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 6.2

```
<?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="Exchange2010" id="types">
<xs:import namespace="http://www.w3.org/XML/1998/namespace"/>
<xs:include schemaLocation="MS-OXWSCDATA-types.xsd"/>
<xs:complexType name="ArrayOfSmtAddressType">
<xs:choice maxOccurs="unbounded">
<xs:element name="SmtAddress" 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="SmtAddress" 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:restriction>
</xs:simpleType>
```

```

</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 includes the file listed in the following table. For the schema file to operate correctly, this file has to be in the folder that contains the WSDL, types schema, and messages schema files for this protocol.

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

```

<?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="SmtptAddress" 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 product versions. References to product versions include released service packs.

- 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.

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 made to [MS-OXWSMSHR] protocol documentation between November 2009 and February 2010 releases. Changes are classed as major, minor, or editorial.

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.
- A protocol is deprecated.
- The removal of a document from the documentation set.
- Changes made for template compliance.

Minor changes do not affect protocol interoperability or implementation. Examples are updates to fix technical accuracy or ambiguity at the sentence, paragraph, or table level.

Editorial changes apply to grammatical, formatting, and style issues.

No changes means that the document is identical to its last release.

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

- New content added.
- Content update.
- 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 always have the revision type "Editorially updated."

Some important terms used in revision 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.

Changes are listed in the following table. If you need further information, please contact protocol@microsoft.com.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Revision Type
1.1 Glossary	Added the terms "Calendar folder", "folder", "mailbox", "shared folder", "Simple Mail Transfer Protocol (SMTP)", "SOAP message", and "store".	N	Content update.
1.2.1 Normative References	Added references for [MS-OXSHRMSG] and [MS-OXWSCORE].	N	Content update.
1.3 Protocol Overview	54300 Removed "(Synopsis)" from section heading.	N	Content update.

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