[MS-OXSHARE]: Sharing Message Object Protocol Specification

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Revision Summary			
Author	Date	Version	Comments
Microsoft Corporation	April 4, 2008	0.1	Initial Availability

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1 Introduction

Sharing message objects are messages that allow a user to communicate status relating to the sharing of **folders**.

The Sharing Message Object Protocol specifies:

- The message format used to inform a user that they have been granted access to another user's folder and provide the information necessary to locate that folder.

- The message format used to request access to a user's folder.

- The message format used to respond to requests for access to a folder.

1.1 Glossary

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

>**address book object**
>
>**folder**
>
>**message object**
>
>**named property**
>
>**property**
>
>**property ID or property identifier**
>
>**special folder**

The following terms are specific to this document:

sharing invitation: A type of sharing **message object** that informs a user that the user has been granted access to another user's **folder** and provides the information necessary to locate that folder.

sharing message object: A **message object** that is used to inform a user that the user has been granted access to another user's folder, request access to a recipient's folder, or respond to a request for access to a folder.

sharing provider: A software agent responsible for properly generating and processing a predefined sharing message object format.

sharing request: A type of sharing message object that is used to request access to a user's **folder**.

sharing response: A type of sharing message object that is used to respond to a **sharing request**.

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

[MS-OXCFOLD] Microsoft Corporation, "Folder Object Protocol Specification", April 2008.

[MS-OXCMSG] Microsoft Corporation, "Message and Attachment Object Protocol Specification", April 2008.

[MS-OXCPRPT] Microsoft Corporation, "Property and Stream Object Protocol Specification", April 2008.

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

[MS-OXOABK] Microsoft Corporation, "Address Book Object Protocol Specification", April 2008.

[MS-OXODLGT] Microsoft Corporation, "Delegate Access Configuration Protocol Specification", April 2008.

[MS-OXOMSG] Microsoft Corporation, "E-mail Object Protocol Specification", April 2008.

[MS-OXOSFLD] Microsoft Corporation, "Special Folders Protocol Specification", April 2008.

[MS-OXPROPS] Microsoft Corporation, "Office Exchange Protocols Master Property List Specification", April 2008.

[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.

1.2.2 Informative References

None.

1.3 Protocol Overview (Synopsis)

The Sharing Message Object Protocol allows for the representation of a communication related to sharing a **folder**. It extends the Message and Attachment Object Protocol in that it defines new **properties** and adds restrictions to the properties that are specified in [MS-OXCMSG].

The Sharing Message Object Protocol specifies the format and semantics of the **sharing message object**. The properties that are specific to a sharing message object facilitate

communication about granting access to a folder, requesting access to a folder, or responding to a request for access to a folder.

1.4 Relationship to Other Protocols

The Sharing Message Object Protocol specification extends the Message and Attachment Object Protocol specified in [MS-OXCMSG] and relies on an understanding of how to work with properties, folders, and **special folders** (see [MS-OXCPRPT], [MS-OXCFOLD], and [MS-OXOSFLD], respectively). It also uses the E-mail Object Protocol specified in [MS-OXOMSG] for message submission and delivery.

1.5 Prerequisites/Preconditions

The Sharing Message Object Protocol has the same prerequisites and preconditions as specified in [MS-OXCMSG] and [MS-OXOMSG].

1.6 Applicability Statement

The Sharing Message Object Protocol can be used to notify another user that access has been granted to a folder. This protocol can also be used to request access to a folder and to respond to such requests.

The Sharing Message Object Protocol cannot be used to convey the above about any other type of object besides folders.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

This protocol provides no vendor-extensibility beyond what is specified in [MS-OXCMSG].

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The Sharing Message Object Protocol uses the protocols specified in [MS-OXCPRPT] and [MS-OXCMSG] as its primary transport mechanism.

2.2 Message Syntax

A sharing message object can be created and modified by clients and servers. Except where noted below, this section defines constraints under which both clients and servers operate.

Clients operate on sharing message object using the E-mail Object Protocol and the Message and Attachment Object Protocol (see [MS-OXOMSG] and [MS-OXCMSG], respectively). How a server operates on sharing message objects is implementation-dependent. The results of any such operation are exposed to clients in a manner that is consistent with the Sharing Object Protocol.

Unless otherwise specified below, a sharing message object adheres to all property constraints specified in [MS-OXPROPS] and all property constraints specified in [MS-OXCMSG]. A sharing message object MAY <1> also contain other properties specified in [MS-OXPROPS], but these properties have no impact on the Sharing Message Object Protocol.

Where a string value is specified as a hexadecimal string representation of a binary value, the string value is a sequence of hexadecimal digits that reflect the byte sequence of the binary value. For example, the string "00000000DCA740C8" is the hexadecimal string representation of the byte sequence

    0000   00 00 00 00 dc a7 40 c8

Where a string value is specified as a hexadecimal string representation of an integer value, the string value is a sequence of hexadecimal digits that reflect the integer value in big endian format, without an "0x" prefix, and without leading "0" characters. For example, the hexadecimal string representation of the integer 0x0000010B would be "10B".

2.2.1 Common Sharing Message Object Properties

The following properties are specific to sharing message objects.

2.2.1.1 PidLidSharingCapabilities

Type: PtypInteger32.

MUST be one of the following values:

Value	Scenario
0x00040290	This sharing message object relates to a special folder.
0x000402B0	This sharing message object does not relate to a special folder.

2.2.1.2 PidNameXSharingCapabilities

Type: PtypString.

The hexadecimal string representation of PidLidSharingCapabilities.

2.2.1.3 PidLidSharingConfigurationUrl

Type: PtypString.

MUST be a zero-length string.

2.2.1.4 PidNameXSharingConfigurationUrl

Type: PtypString.

MUST be set to the same value as PidLidSharingConfigurationUrl.

2.2.1.5 PidLidSharingFlavor

Type: PtypInteger32.

MUST be one of the following values:

Value	Type of sharing message object
0x00020310	A **sharing invitation** for a special folder
0x00000310	A sharing invitation for a folder that is not a special folder
0x00020500	A **sharing request**.
0x00020710	Both a sharing invitation for a special folder and a sharing request for the recipient's equivalent special folder.
0x00025100	A **sharing response** denying a request.
0x00023310	A sharing response accepting a request (also a type of **sharing invitation**).

2.2.1.6 PidNameXSharingFlavor

Type: PtypString.

MUST be set to the hexadecimal string representation of the value of PidLidSharingFlavor.

2.2.1.7 PidLidSharingInitiatorEntryId

Type: PtypBinary.

MUST be set to the value of PidTagEntryId for the **address book object** of the currently logged in user (see [MS-OXOABK]).

2.2.1.8 PidLidSharingInitiatorName

Type: PtypString.

MUST be set to the value of PidTagDisplayName from the address book object identified by PidLidSharingInitiatorEntryId and SHOULD be ignored <2>.

2.2.1.9 PidLidSharingInitiatorSmtp

Type: PtypString.

MUST be set to the value of PidTagSmtpAddress from the address book object identified by PidLidSharingInitiatorEntryId and SHOULD be ignored <3>.

2.2.1.10 PidLidSharingLocalType

Type: PtypString.

MUST be set to the value of PidTagContainerClass of the folder being shared and MUST be one of the following values:

Valid value of PidLidSharingLocalType
"IPF.Appointment"
"IPF.Contact"
"IPF.Task"
"IPF.StickyNote"
"IPF.Journal"

2.2.1.11 PidNameXSharingLocalType

Type: PtypString.

MUST be set to the same value as PidLidSharingLocalType.

2.2.1.12 PidLidSharingProviderGuid

Type: PtypBinary.

MUST be set to %xAE.F0.06.00.00.00.00.C0.00.00.00.00.00.00.00.46.

2.2.1.13 PidNameXSharingProviderGuid

Type: PtypString.

MUST be set to the hexadecimal string representation of the value of PidLidSharingProviderGuid. That is, "AEF0060000000C000000000000046".

2.2.1.14 PidLidSharingProviderName

Type: PtypString.

A user-displayable name of the **sharing provider** identified by PidLidSharingProviderGuid. SHOULD be ignored <4>.

2.2.1.15 PidNameXSharingProviderName

Type: PtypString.

MUST be set to the same value as PidLidSharingProviderName and SHOULD be ignored
<5>.

2.2.1.16 PidLidSharingProviderUrl

Type: PtypString.

A URL related to the sharing provider identified by PidLidSharingProviderGuid. Generally used to provide more information about the sharing provider. SHOULD be ignored <6>.

2.2.1.17 PidNameXSharingProviderUrl

Type: PtypString.

MUST be set to the same value as PidLidSharingProviderUrl and SHOULD be ignored <7>.

2.2.2 Sharing Request Properties

The following property constraints are specific to sharing requests to which the user has responded, which are sharing message objects with PidLidSharingFlavor value of 0x00020500 or 0x00020710. For all other types of sharing message objects, these properties MUST NOT be set.

2.2.2.1 PidLidSharingResponseTime

Type: PtypTime

The time at which the recipient of the sharing request sent a sharing response.

2.2.2.2 PidLidSharingResponseType

Type: PtypInteger32

The type of response with which the recipient of the sharing request responded. MUST be one of the following values:

Value	Meaning
0x00000000	No response
0x00000001	Accepted
0x00000002	Denied

2.2.3 Sharing Invitation Properties

The following property constraints are specific to sharing invitations, which are sharing message objects with a PidLidSharingFlavor value of 0x00020310, 0x00000310, 0x0020710, or 0x0023310. For all other types of sharing message objects, these properties SHOULD NOT be set and MUST be ignored <8>.

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2.2.3.1 PidLidSharingRemoteName

Type: PtypString.

MUST be set to the value of PidTagDisplayName on the folder being shared.

2.2.3.2 PidNameXSharingRemoteName

Type: PtypString.

MUST be set to the same value as PidLidSharingRemoteName.

2.2.3.3 PidLidSharingRemoteStoreUid

Type: PtypString.

MUST be set to a hexadecimal string representation of the value of PidTagStoreEntryId on the folder being shared.

2.2.3.4 PidNameXSharingRemoteStoreUid

Type: PtypString.

MUST be set to the same value as PidLidSharingRemoteStoreUid.

2.2.3.5 PidLidSharingRemoteType

Type: PtypString.

MUST be set to the same value as PidLidSharingLocalType and SHOULD be ignored <9>.

2.2.3.6 PidNameXSharingRemoteType

Type: PtypString.

MUST be set to the same value as PidLidSharingRemoteType and SHOULD be ignored <10>.

2.2.3.7 PidLidSharingRemoteUid

Type: PtypString.

MUST be set to the hexadecimal string representation of the value of PidTagEntryId on the folder being shared.

2.2.3.8 PidNameXSharingRemoteUid

Type: PtypString.

MUST be set to the same value as PidLidSharingRemoteUid.

2.2.4 Ignored Properties

The value of the following properties SHOULD NOT be set and MUST be ignored <11>:

- PidLidSharingAnonymity

- PidLidSharingBindingEntryId

- PidLidSharingBrowseUrl

- PidNameXSharingBrowseUrl

- PidLidSharingDataRangeEnd

- PidLidSharingDataRangeStart

- PidLidSharingDetail

- PidLidSharingExtensionXml

- PidNameXSharingExendedCaps

- PidLidSharingFilter

- PidLidSharingFlags

- PidLidSharingFolderEntryId

- PidLidSharingIndexEntryId

- PidLidSharingInstanceGuid

- PidNameXSharingInstanceGuid

- PidLidSharingLastAutoSyncTime

- PidLidSharingLastSyncTime

- PidLidSharingLocalComment

- PidLidSharingLocalLastModificationTime

- PidLidSharingLocalName

- PidLidSharingLocalPath

- PidLidSharingLocalStoreUid

- PidLidSharingLocalUid

- PidLidSharingOriginalMessageEntryId

- PidLidSharingParentBindingEntryId

- PidLidSharingParticipants

- PidLidSharingPermissions

- PidLidSharingProviderExtension

- PidLidSharingRangeEnd

- PidLidSharingRangeStart

- PidLidSharingReciprocation

- PidLidSharingRemoteByteSize

- PidLidSharingRemoteComment

- PidLidSharingRemoteCrc

- PidLidSharingRemoteLastModificationTime

- PidLidSharingRemoteMessageCount

- PidLidSharingRemotePass

- PidLidSharingRemotePath

- PidNameXSharingRemotePath

- PidLidSharingRemoteUser

- PidLidSharingRemoteVersion

- PidLidSharingRoamLog

- PidLidSharingStart

- PidLidSharingStatus

- PidLidSharingStop

- PidLidSharingSyncFlags

- PidLidSharingSyncInterval

- PidLidSharingTimeToLive

- PidLidSharingTimeToLiveAuto

- PidLidSharingWorkingHoursDays

- PidLidSharingWorkingHoursEnd

- PidLidSharingWorkingHoursStart

- PidLidSharingWorkingHoursTimeZone

2.2.5 Additional Property Constraints

This protocol specifies additional constraints on the following properties beyond what is specified in [MS-OXCMSG].

2.2.5.1 PidNameContentClass

Type: PtypString.

MUST be set to "Sharing".

2.2.5.2 PidTagMessageClass

Type: PtypString.

MUST be set to "IPM.Sharing" or a value that begins with "IPM.Sharing.".

3 Protocol Details

There is no server role beyond those specified in [MS-OXCMSG] and [MS-OXOMSG].

3.1 Client Details

The client role is to create and operate on sharing message objects and otherwise operate in the client role as specified in [MS-OXCMSG] and [MS-OXOMSG].

3.1.1 Abstract Data Model

This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this document.

A sharing message object extends the message object and has an abstract data model that does not differ from that specified in [MS-OXCMSG].

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

3.1.4.1 Creating a Sharing Invitation

The following table lists the properties and the corresponding values that MUST be set, as specified in section 2.2, to create a sharing invitation:

Property	Valid Values
PidTagMessageClass	"IPM.Sharing" or a value that begins with "IPM.Sharing."
PidNameContentClass	"Sharing"
PidLidSharingProviderGuid	%xAE.F0.06.00.00.00.00.C0.00.00.00.00.00.00.00.46
PidNameXSharingProviderGuid	"AEF0060000000000C000000000000046"
PidLidSharingProviderName	A user-displayable name of the sharing provider

	identified by PidLidSharingProviderGuid.
PidNameXSharingProviderName	The same value as PidLidSharingProviderName.
PidLidSharingProviderUrl	A URL related to the sharing provider identified by PidLidSharingProviderGuid.
PidNameXSharingProviderUrl	The same value as PidLidSharingProviderUrl.
PidLidSharingConfigurationUrl	A zero-length string.
PidNameXSharingConfigurationUrl	The same value as PidLidSharingConfigurationUrl.
PidLidSharingFlavor	If the folder being shared is a special folder: 0x00020310 If the folder being shared is not a special folder: 0x00000310
PidNameXSharingFlavor	If the folder being shared is a special folder: "20310" If the folder being shared is not a special folder: "310"
PidLidSharingCapabilities	If the folder being shared is a special folder: 0x00040290 If the folder being shared is not a special folder: 0x000402B0
PidNameXSharingCapabilities	If the folder being shared is a special folder: "40290" If the folder being shared is not a special folder: "402B0"
PidLidSharingInitiatorEntryid	The value of PidTagEntryId for the address book object of the currently logged in user.
PidLidSharingInitiatorName	The value of PidTagDisplayName from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingInitiatorSmtp	The value of PidTagSmtpAddress from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingRemoteName	The value of PidTagDisplayName on the folder being shared.

PidNameXSharingRemoteName	The same value as PidLidSharingRemoteName.
PidLidSharingRemoteUid	The value of PidTagEntryId on the folder being shared.
PidNameXSharingRemoteUid	Hexadecimal string representation of the value of PidLidSharingRemoteUid.
PidLidSharingRemoteStoreUid	The value of PidTagStoreEntryId on the folder being shared.
PidNameXSharingRemoteStoreUid	Hexadecimal string representation of the value of PidLidSharingRemoteStoreUid.
PidLidSharingLocalType	A value from Table 1 according to the type of folder being shared.
PidNameXSharingLocalType	The same value as PidLidSharingLocalType.
PidLidSharingRemoteType	The same value as PidLidSharingLocalType.
PidNameXSharingRemoteType	The same value as PidLidSharingRemoteType.

Table 1: Valid Values for PidLidSharingLocalType on a Sharing Invitation

Type of folder	Valid value
Calendar	"IPF.Appointment"
Contacts	"IPF.Contact"
Tasks	"IPF.Task"
Notes	"IPF.StickyNote"
Journal	"IPF.Journal"

3.1.4.2 Creating a Sharing Request

The following table lists the properties and the corresponding values that MUST be set, as specified in section 2.2, to create a sharing request:

Property	Valid Values
PidTagMessageClass	"IPM.Sharing" or a value that begins with

	"IPM.Sharing."
PidNameContentClass	"Sharing"
PidLidSharingProviderGuid	%xAE.F0.06.00.00.00.00.C0.00.00.00.00.00.00.00.46
PidNameXSharingProviderGuid	"AEF0060000000000C000000000000046"
PidLidSharingProviderName	A user-displayable name of the sharing provider identified by PidLidSharingProviderGuid.
PidNameXSharingProviderName	The same value as PidLidSharingProviderName.
PidLidSharingProviderUrl	A URL related to the sharing provider identified by PidLidSharingProviderGuid.
PidNameXSharingProviderUrl	The same value as PidLidSharingProviderUrl.
PidLidSharingConfigurationUrl	A zero-length string.
PidNameXSharingConfigurationUrl	The same value as PidLidSharingConfigurationUrl.
PidLidSharingFlavor	0x00020500
PidNameXSharingFlavor	"20500"
PidLidSharingCapabilities	0x00040290
PidNameXSharingCapabilities	"40290"
PidLidSharingInitiatorEntryid	The value of PidTagEntryId for the address book object of the currently logged in user.
PidLidSharingInitiatorName	The value of PidTagDisplayName from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingInitiatorSmtp	The value of PidTagSmtpAddress from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingLocalType	A value from Table 2 according to the special folder being requested.
PidNameXSharingLocalType	The same value as PidLidSharingLocalType.

Table 2: Valid Values for PidLidSharingLocalType on a Sharing Request

Special Folder (See [MS-OXOSFLD])	Valid value
Calendar	"IPF.Appointment"
Contacts	"IPF.Contact"
Tasks	"IPF.Task"
Notes	"IPF.StickyNote"
Journal	"IPF.Journal"

3.1.4.3 Creating a Sharing Response – Accept

The client MUST determine the special folder being requested by the sharing request according to the following table:

Value of PidLidSharingLocalType on the sharing request	Special Folder being requested (See [MS-OXOSFLD])
"IPF.Appointment"	Calendar
"IPF.Contact"	Contacts
"IPF.Task"	Tasks
"IPF.StickyNote"	Notes
"IPF.Journal"	Journal

The following table lists the properties and the corresponding values that MUST be set, as specified in section 2.2, to create a sharing response that indicates a sharing request has been accepted and provides the information necessary to locate the special folder being requested:

Property	Valid Values
PidTagMessageClass	"IPM.Sharing" or a value that begins with "IPM.Sharing."
PidNameContentClass	"Sharing"
PidLidSharingProviderGuid	%xAE.F0.06.00.00.00.00.C0.00.00.00.00.00.00.00.46
PidNameXSharingProviderGuid	"AEF0060000000000C000000000000046"

PidLidSharingProviderName	A user-displayable name of the sharing provider identified by PidLidSharingProviderGuid.
PidNameXSharingProviderName	The same value as PidLidSharingProviderName.
PidLidSharingProviderUrl	A URL related to the sharing provider identified by PidLidSharingProviderGuid.
PidNameXSharingProviderUrl	The same value as PidLidSharingProviderUrl.
PidLidSharingConfigurationUrl	A zero-length string.
PidNameXSharingConfigurationUrl	The same value as PidLidSharingConfigurationUrl.
PidLidSharingFlavor	0x00023310
PidNameXSharingFlavor	"23310"
PidLidSharingCapabilities	0x00040290
PidNameXSharingCapabilities	"40290"
PidLidSharingInitiatorEntryid	The value of PidTagEntryId for the address book object of the currently logged in user.
PidLidSharingInitiatorName	The value of PidTagDisplayName from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingInitiatorSmtp	The value of PidTagSmtpAddress from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingRemoteName	The value of PidTagDisplayName on the special folder being requested.
PidNameXSharingRemoteName	The same value as PidLidSharingRemoteName.
PidLidSharingRemoteUid	The value of PidTagEntryId on the special folder being requested.
PidNameXSharingRemoteUid	Hexadecimal string representation of the value of PidLidSharingRemoteUid.
PidLidSharingRemoteStoreUid	The value of PidTagStoreEntryId on the special

	folder being requested.
PidNameXSharingRemoteStoreUid	Hexadecimal string representation of the value of PidLidSharingRemoteStoreUid.
PidLidSharingLocalType	The value of PidLidSharingLocalType on the sharing request to which this message is responding.
PidNameXSharingLocalType	The same value as PidLidSharingLocalType.
PidLidSharingRemoteType	The same value as PidLidSharingLocalType.
PidNameXSharingRemoteType	The same value as PidLidSharingRemoteType.

The following table lists the properties and the corresponding values that MUST be set, as specified in section 2.2, on the sharing request to which this sharing response is responding:

Property	Valid Values
PidLidSharingResponseType	0x00000001
PidLidSharingResponseTime	The time at which the sharing response was sent.

3.1.4.4 Creating a Sharing Response – Deny

The following table lists the properties and the corresponding values that MUST be set, as specified in section 2.2, to create a sharing response that indicates a sharing request has been denied:

Property	Valid Values
PidTagMessageClass	"IPM.Sharing" or a value that begins with "IPM.Sharing."
PidNameContentClass	"Sharing"
PidLidSharingProviderGuid	%xAE.F0.06.00.00.00.00.C0.00.00.00.00.00.00.00.46
PidNameXSharingProviderGuid	"AEF0060000000000C000000000000046"
PidLidSharingProviderName	A user-displayable name of the sharing provider identified by PidLidSharingProviderGuid.
PidNameXSharingProviderName	The same value as PidLidSharingProviderName.
PidLidSharingProviderUrl	A URL related to the sharing provider identified by

	PidLidSharingProviderGuid.
PidNameXSharingProviderUrl	The same value as PidLidSharingProviderUrl.
PidLidSharingConfigurationUrl	A zero-length string.
PidNameXSharingConfigurationUrl	The same value as PidLidSharingConfigurationUrl.
PidLidSharingFlavor	0x00025100
PidNameXSharingFlavor	"25100"
PidLidSharingCapabilities	0x00040290
PidNameXSharingCapabilities	"40290"
PidLidSharingInitiatorEntryid	The value of PidTagEntryId for the address book object of the currently logged in user.
PidLidSharingInitiatorName	The value of PidTagDisplayName from the address book object identified by PidLidSharingInitiatorEntryId.
PidLidSharingInitiatorSmtp	The value of PidTagSmtpAddress from the address book object identified by PidLidSharingInitiatorEntryId.
PiLidSharingLocalType	The value of PidLidSharingLocalType on the sharing request to which this message is responding.
PidNameXSharingLocalType	The same value as PidLidSharingLocalType.

The following table lists the properties and the corresponding values that MUST be set, as specified in section 2.2, on the sharing request to which this sharing response is responding:

Property	Valid Values
PidLidSharingResponseType	0x00000002
PidLidSharingResponseTime	The time at which the sharing response was sent.

3.1.5 Message Processing Events and Sequencing Rules

None.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

Kendall Keil wishes to see Ryan Gregg's calendar **special folder**. Kendall sends a **sharing request** to Ryan and Ryan responds.

The following is a description of what a client might do to accomplish the above scenario and the responses a server might return. See [MS-OXCPRPT] and [MS-OXCMSG] for details on ROPs.

Before manipulating **sharing message objects**, the client needs to ask the server to perform a mapping from **named properties** to **property identifiers**, using RopGetPropertyIdsFromNames:

Property	Property Set GUID	NameID
PidNameContentClass	{00020386-0000-0000-c000-000000000046}	Content-Class
PidLidSharingProviderGuid	{00062040-0000-0000-C000-000000000046}	0x00008A01
PidNameXSharingProviderGuid	{00020386-0000-0000-C000-000000000046}	X-Sharing-Provider-Guid
PidLidSharingProviderName	{00062040-0000-0000-C000-000000000046}	0x00008A02
PidNameXSharingProviderName	{00020386-0000-0000-C000-000000000046}	X-Sharing-Provider-Name
PidLidSharingProviderUrl	{00062040-0000-0000-C000-000000000046}	0x00008A03
PidNameXSharingProviderUrl	{00020386-0000-0000-C000-000000000046}	X-Sharing-Provider-Url
PidLidSharingConfigurationUrl	{00062040-0000-0000-C000-000000000046}	0x00008A24
PidNameXSharingConfigurationUrl	{00020386-0000-0000-C000-000000000046}	X-Sharing-Config-Url
PidLidSharingFlavor	{00062040-0000-0000-C000-000000000046}	0x00008A18
PidNameXSharingFlavor	{00020386-0000-0000-C000-000000000046}	X-Sharing-Flavor
PidLidSharingCapabilities	{00062040-0000-0000-C000-000000000046}	0x00008A17
PidNameXSharingCapabilities	{00020386-0000-0000-C000-000000000046}	X-Sharing-Capabilities
PiLidSharingLocalType	{00062040-0000-0000-C000-000000000046}	0x00008A14
PidNameXSharingLocalType	{00020386-0000-0000-C000-000000000046}	X-Sharing-Local-Type
PidLidSharingInitiatorEntryId	{00062040-0000-0000-C000-000000000046}	0x00008A09
PidLidSharingInitiatorName	{00062040-0000-0000-C000-000000000046}	0x00008A07
PidLidSharingInitiatorSmtp	{00062040-0000-0000-C000-000000000046}	0x00008A08

PidLidSharingRemoteName	{00062040-0000-0000-C000-000000000046}	0x00008A05
PidNameXSharingRemoteName	{00020386-0000-0000-C000-000000000046}	X-Sharing-Remote-Name
PidLidSharingRemoteType	{00062040-0000-0000-C000-000000000046}	0x00008A1D
PidNameXSharingRemoteType	{00020386-0000-0000-C000-000000000046}	X-Sharing-Remote-Type
PidLidSharingRemoteUid	{00062040-0000-0000-C000-000000000046}	0x00008A06
PidNameXSharingRemoteUid	{00020386-0000-0000-C000-000000000046}	X-Sharing-Remote-Uid
PidLidSharingRemoteStoreUid	{00062040-0000-0000-C000-000000000046}	0x00008A48
PidNameXSharingRemoteStoreUid	{00020386-0000-0000-C000-000000000046}	X-Sharing-Remote-Store-Uid
PidLidSharingResponseType	{00062040-0000-0000-C000-000000000046}	0x00008A27
PidLidSharingResponseTime	{00062040-0000-0000-C000-000000000046}	0x00008A28

The server might respond with the following identifiers, which will be used in the examples that follow. (The actual identifiers are at the discretion of the server.)

Property	Property ID
PidNameContentClass	0x806D
PidLidSharingProviderGuid	0x8243
PidNameXSharingProviderGuid	0x836F
PidLidSharingProviderName	0x8244
PidNameXSharingProviderName	0x8370
PidLidSharingProviderUrl	0x8245
PidNameXSharingProviderUrl	0x8371
PidLidSharingConfigurationUrl	0x83D0
PidNameXSharingConfigurationUrl	0x8377
PidLidSharingFlavor	0x823D
PidNameXSharingFlavor	0x836D
PidLidSharingCapabilities	0x823C
PidNameXSharingCapabilities	0x836C
PiLidSharingLocalType	0x824F
PidNameXSharingLocalType	0x8379
PidLidSharingInitiatorEntryId	0x8249
PidLidSharingInitiatorName	0x8029
PidLidSharingInitiatorSmtp	0x8248
PidLidSharingRemoteName	0x8026

PidNameXSharingRemoteName	0x8373
PidLidSharingRemoteType	0x8247
PidNameXSharingRemoteType	0x8376
PidLidSharingRemoteUid	0x8246
PidNameXSharingRemoteUid	0x8374
PidLidSharingRemoteStoreUid	0x83E1
PidNameXSharingRemoteStoreUid	0x8375
PidLidSharingResponseType	0x83E4
PidLidSharingResponseTime	0x83E3

4.1 Sending a Sharing Request

Kendall's client creates a **message object**, using RopCreateMessage. The server returns a success code and a handle to a message object.

The client then uses RopSetProperties to set the following **properties** and corresponding values on the message object to create a sharing request:

Property	Property ID	Data Type	Value
PidTagMessageClass	0x001A	PtypString	"IPM.Sharing"
PidNameContentClass	0x806D	PtypString	"Sharing"
PidTagNormalizedSubject	0x0E1D	PtypString	"Sharing Request: Calendar"
PidTagSubjectPrefix	0x003D	PtypString	"" (a zero-length string)
PidLidSharingProviderGuid	0x8243	PtypBinary	*(See Figure 1)*
PidNameXSharingProviderGuid	0x836F	PtypString	"AEF0060000000000C00 0000000000046"
PidLidSharingProviderName	0x8244	PtypString	"Microsoft Exchange"
PidNameXSharingProviderName	0x8370	PtypString	"Microsoft Exchange"
PidLidSharingProviderUrl	0x8245	PtypString	"http://www.microsoft.c om/exchange"
PidNameXSharingProviderUrl	0x8371	PtypString	"http://www.microsoft.c om/exchange"
PidLidSharingConfigurationUrl	0x83D0	PtypString	"" (a zero-length string)
PidNameXSharingConfigurationUrl	0x8377	PtypString	"" (a zero-length string)
PidLidSharingFlavor	0x823D	PtypInteger32	0x00020500
PidNameXSharingFlavor	0x836D	PtypString	"20500"

PidLidSharingCapabilities	0x823C	PtypInteger32	0x00040290
PidNameXSharingCapabilities	0x836C	PtypString	"40290"
PiLidSharingLocalType	0x824F	PtypString	"IPF.Appointment"
PidNameXSharingLocalType	0x8379	PtypString	"IPF.Appointment"
PidLidSharingInitiatorEntryid	0x8249	PtypBinary	*(See Figure 2)*
PidLidSharingInitiatorName	0x8029	PtypString	user12
PidLidSharingInitiatorSmtp	0x8248	PtypString	user12@szfkuk-dom.extest.microsoft.com

16 Bytes

```
0000  ae f0 06 00 00 00 00 00 c0 00 00 00 00 00 00 46  .............F
```

Figure 1: Value of PidLidSharingProviderGuid

125 Bytes

```
0000  00 00 00 00 dc a7 40 c8 c0 42 10 1a b4 b9 08 00  ......@..B......
0010  2b 2f e1 82 01 00 00 00 00 00 00 00 2f 6f 3d 46  +/........../o=F
0020  69 72 73 74 20 4f 72 67 61 6e 69 7a 61 74 69 6f  irst Organizatio
0030  6e 2f 6f 75 3d 45 78 63 68 61 6e 67 65 20 41 64  n/ou=Exchange Ad
0040  6d 69 6e 69 73 74 72 61 74 69 76 65 20 47 72 6f  ministrative Gro
0050  75 70 20 28 46 59 44 49 42 4f 48 46 32 33 53 50  up (FYDIBOHF23SP
0060  44 4c 54 29 2f 63 6e 3d 52 65 63 69 70 69 65 6e  DLT)/cn=Recipien
0070  74 73 2f 63 6e 3d 75 73 65 72 31 32 00           ts/cn=user12.
```

Figure 2: Value of PidLidSharingInitiatorEntryId

After properly addressing the message as specified in [MS-OXOMSG], the client uses RopSubmitMessage to send the message to Ryan and then uses RopRelease to release the message object.

4.2 Denying a Sharing Request

Ryan desires to send a **sharing response** denying the sharing request described in section 4.1. The client uses RopCreateMessage to create a new message object. The server returns a success code and a handle to a message object.

The client then uses RopSetProperties to set the sharing properties for a sharing response that indicates that the request was denied:

Property	Property ID	Property Type	Value
PidTagMessageClass	0x001A	PtypString	"IPM.Sharing"
PidNameContentClass	0x806d	PtypString	"Sharing"
PidTagNormalizedSubject	0x0E1D	PtypString	"Denied: Sharing Request: Calendar"
PidTagSubjectPrefix	0x003D	PtypString	"" (a zero-length string)
PidLidSharingProviderGuid	0x8243	PtypBinary	*(See Figure 3)*
PidNameXSharingProviderGuid	0x836F	PtypString	"AEF0060000000000C000000 0000000046"
PidLidSharingProviderName	0x8244	PtypString	"Microsoft Exchange"
PidNameXSharingProviderName	0x8370	PtypString	"Microsoft Exchange"
PidLidSharingProviderUrl	0x8245	PtypString	"http://www.microsoft.com/ exchange"
PidNameXSharingProviderUrl	0x8371	PtypString	"http://www.microsoft.com/ exchange"
PidLidSharingConfigurationUrl	0x83D0	PtypString	"" (a zero-length string)
PidNameXSharingConfigurationUrl	0x8377	PtypString	"" (a zero-length string)
PidLidSharingFlavor	0x823D	PtypInteger32	0x00025100
PidNameXSharingFlavor	0x836D	PtypString	"25100"
PidLidSharingCapabilities	0x823C	PtypInteger32	0x00040290
PidNameXSharingCapabilities	0x836C	PtypString	"40290"
PiLidSharingLocalType	0x824F	PtypString	"IPF.Appointment"
PidNameXSharingLocalType	0x8379	PtypString	"IPF.Appointment"
PidLidSharingInitiatorEntryid	0x8249	PtypBinary	*(See Figure 4)*
PidLidSharingInitiatorName	0x8029	PtypString	user12
PidLidSharingInitiatorSmtp	0x8248	PtypString	user12@szfkuk-dom.extest.microsoft.com

16 Bytes

```
0000  ae f0 06 00 00 00 00 00 c0 00 00 00 00 00 00 46  ...............F
```

Figure 3: Value of PidLidSharingProviderGuid

125 Bytes

```
0000   00 00 00 00 dc a7 40 c8 c0 42 10 1a b4 b9 08 00   ......@..B......
0010   2b 2f e1 82 01 00 00 00 00 00 00 00 2f 6f 3d 46   +/........../o=F
0020   69 72 73 74 20 4f 72 67 61 6e 69 7a 61 74 69 6f   irst Organizatio
0030   6e 2f 6f 75 3d 45 78 63 68 61 6e 67 65 20 41 64   n/ou=Exchange Ad
0040   6d 69 6e 69 73 74 72 61 74 69 76 65 20 47 72 6f   ministrative Gro
0050   75 70 20 28 46 59 44 49 42 4f 48 46 32 33 53 50   up (FYDIBOHF23SP
0060   44 4c 54 29 2f 63 6e 3d 52 65 63 69 70 69 65 6e   DLT)/cn=Recipien
0070   74 73 2f 63 6e 3d 75 73 65 72 31 32 00            ts/cn=user12.
```

Figure 4: Value of PidLidSharingInitiatorEntryId

After properly addressing the message as specified in [MS-OXOMSG], the client uses RopSubmitMessage to send the message to Kendall and then uses RopRelease to release the message object.

Then, the client uses RopOpenMessage to open the sharing request. The server returns a success code and a handle to the message object.

The client uses RopSetProperties to set the sharing properties on the sharing request to indicate that the client has sent a sharing response denying the request and the time at which it was sent:

Property	Property ID	Property Type	Data	Value
PidLidSharingResponseType	0x83E4	PtypInteger32	02 00 00 00	0x00000002
PidLidSharingResponseTime	0x83E3	PtypTime	00 9A C2 CF E3 7F C8 01	2008/03/06 23:43:00.000

The client uses RopSaveChangesMessage to save the changes and uses RopRelease to release the message object.

4.3   Accepting a Sharing Request

Ryan desires to send a sharing response accepting the sharing request described in section 4.1. The client uses RopCreateMessage to create a new message object. The server returns a success code and a handle to a message object.

The client uses RopSetProperties to set the sharing properties for a sharing response that indicates the request was accepted and provides the information necessary to locate the requested **folder**:

Property	Property ID	Property Type	Value
PidTagMessageClass	0x001A	PtypString	"IPM.Sharing"

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PidNameContentClass	0x806d	PtypString	"Sharing"
PidTagNormalizedSubject	0x0E1D	PtypString	"Allowed: Sharing Request: Calendar"
PidTagSubjectPrefix	0x003D	PtypString	"" (a zero-length string)
PidLidSharingProviderGuid	0x8243	PtypBinary	*(See Figure 5)*
PidNameXSharingProviderGuid	0x836F	PtypString	"AEF0060000000000C00000 0000000046"
PidLidSharingProviderName	0x8244	PtypString	"Microsoft Exchange"
PidNameXSharingProviderName	0x8370	PtypString	"Microsoft Exchange"
PidLidSharingProviderUrl	0x8245	PtypString	"http://www.microsoft.com/ exchange"
PidNameXSharingProviderUrl	0x8371	PtypString	"http://www.microsoft.com/ exchange"
PidLidSharingConfigurationUrl	0x83D0	PtypString	"" (a zero-length string)
PidNameXSharingConfigurationUrl	0x8377	PtypString	"" (a zero-length string)
PidLidSharingFlavor	0x823D	PtypInteger32	0x00023310
PidNameXSharingFlavor	0x836D	PtypString	"23310"
PidLidSharingCapabilities	0x823C	PtypInteger32	0x00040290
PidNameXSharingCapabilities	0x836C	PtypString	"40290"
PiLidSharingLocalType	0x824F	PtypString	"IPF.Appointment"
PidNameXSharingLocalType	0x8379	PtypString	"IPF.Appointment"
PidLidSharingInitiatorEntryId	0x8249	PtypBinary	*(See Figure 6)*
PidLidSharingInitiatorName	0x8029	PtypString	user10
PidLidSharingInitiatorSmtp	0x8248	PtypString	user10@szfkuk-dom.extest.microsoft.com
PidLidSharingRemoteName	0x8026	PtypString	"Calendar"
PidNameXSharingRemoteName	0x8373	PtypString	"Calendar"
PidLidSharingRemoteType	0x8247	PtypString	"IPF.Appointment"
PidNameXSharingRemoteType	0x8376	PtypString	"IPF.Appointment"
PidLidSharingRemoteUid	0x8246	PtypString	"00000000B0FCA4F63C21A6 42BD4B8F1BDBA04BC60100 612A7BAB49F64E4B9C52DB FB5A53AA1C000000F04EEF0 000"
PidNameXSharingRemoteUid	0x8374	PtypString	"00000000B0FCA4F63C21A6

			42BD4B8F1BDBA04BC60100 612A7BAB49F64E4B9C52DB FB5A53AA1C000000F04EEF0 000"
PidLidSharingRemoteStoreUid	0x83E1	PtypString	"0000000038A1BB1005E510 1AA1BB08002B2A56C20000 454D534D44422E444C4C00 000000000000001B55FA20A A6611CD9BC800AA002FC45 A0C0000003336353952392 D413131002F6F3D46697273 74204F7267616E697A61746 96F6E2F6F753D4578636861 6E67652041646D696E69737 4726174697665652047726F75 70202846594449424F48463 2335350444C54292F636E3D 526563697069656E74732F6 36E3D75736572273130000"
PidNameXSharingRemoteStoreUid	0x8375	PtypString	"0000000038A1BB1005E510 1AA1BB08002B2A56C20000 454D534D44422E444C4C00 000000000000001B55FA20A A6611CD9BC800AA002FC45 A0C0000003336353952392 D413131002F6F3D46697273 74204F7267616E697A61746 96F6E2F6F753D4578636861 6E67652041646D696E69737 4726174697665652047726F75 70202846594449424F48463 2335350444C54292F636E3D 526563697069656E74732F6 36E3D75736572273130000"

16 Bytes

```
0000  ae f0 06 00 00 00 00 00 c0 00 00 00 00 00 00 46   ...............F
```

Figure 5: Value of PidLidSharingProviderGuid

125 Bytes

```
0000  00 00 00 00 dc a7 40 c8 c0 42 10 1a b4 b9 08 00   ......@..B......
0010  2b 2f e1 82 01 00 00 00 00 00 00 00 2f 6f 3d 46   +/........../o=F
0020  69 72 73 74 20 4f 72 67 61 6e 69 7a 61 74 69 6f   irst Organizatio
0030  6e 2f 6f 75 3d 45 78 63 68 61 6e 67 65 20 41 64   n/ou=Exchange Ad
0040  6d 69 6e 69 73 74 72 61 74 69 76 65 20 47 72 6f   ministrative Gro
0050  75 70 20 28 46 59 44 49 42 4f 48 46 32 33 53 50   up (FYDIBOHF23SP
0060  44 4c 54 29 2f 63 6e 3d 52 65 63 69 70 69 65 6e   DLT)/cn=Recipien
0070  74 73 2f 63 6e 3d 75 73 65 72 31 30 00            ts/cn=user10.
```

Figure 6: Value of PidLidSharingInitiatorEntryId

After properly addressing the message as specified in [MS-OXOMSG], the client uses RopSubmitMessage to send the message to Kendall and then uses RopRelease to release the message object.

The client then grants Kendall permission to the folder as specified in [MS-OXODLGT].

Then the client uses RopOpenMessage to open the sharing request. The server returns a success code and a handle to the message object.

The client uses RopSetProperties to set the sharing properties on the sharing request to indicate that the client has sent a sharing response accepting the request and the time at which it was sent:

Property	Property ID	Property Type	Data	Value
PidLidSharingResponseType	0x83E4	PtypInteger32	01 00 00 00	0x00000001
PidLidSharingResponseTime	0x83E3	PtypTime	00 9A C2 CF E3 7F C8 01	2008/03/06 23:43:00.000

The client uses RopSaveChangesMessage to save the changes and uses RopRelease to release the message object.

5   Security

5.1   Security Considerations for Implementers

There are no special security considerations specific to the Sharing Message Object Protocol. General security considerations pertaining to the underlying transport apply (see [MS-OXOMSG] and [MS-OXCMSG]).

5.2 Index of Security Parameters

None.

6 Appendix A: Office/Exchange Behavior

The information in this specification is applicable to the following versions of Office/Exchange:

- Exchange 2003 with Service Pack 2 applied
- Office 2007 with Service Pack 1 applied
- Exchange 2007 with Service Pack 1 applied

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Office/Exchange behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies that Office/Exchange does not follow the prescription.

<1> Outlook 2007 SP1 set the following **properties** regardless of user input; their values have no meaning in the context of this protocol.

- PidLidAgingDontAgeMe
- PidLidCurrentVersion
- PidLidCurrentVersionName
- PidLidPercentComplete
- PidLidPrivate
- PidLidReminderDelta
- PidLidReminderSet
- PidLidReminderSignalTime
- PidLidTaskMode
- PidLidSideEffect
- PidLidTaskAcceptanceState
- PidLidTaskActualEffort
- PidLidTaskAssigner
- PidLidTaskComplete

- PidLidTaskEstimatedEffort

- PidLidTaskFFixOffline

- PidLidTaskFRecurring

- PidLidTaskNoCompute

- PidLidTaskOrdinal

- PidLidTaskOwnership

- PidLidTaskRole

- PidLidTaskState

- PidLidTaskStatus

- PidLidTaskVersion

- PidLidTeamTask

- PidLidValidFlagStringProof

- PidTagAlternateRecipientAllowed

- PidTagClientSubmitTime

- PidTagDeleteAfterSubmit

- PidTagImportance

- PidTagMessageDeliveryTime

- PidTagPriority

- PidTagReadReceiptRequested

- PidTagSensitivity

<2> Outlook 2007 SP1 sets the value but, upon receipt, ignores the property and queries the address book for its value based on PidLidSharingInitiatorEntryId.

<3> Outlook 2007 SP1 sets the value but, upon receipt, ignores the property and queries the address book for its value based on PidLidSharingInitiatorEntryId.

<4> Outlook 2007 SP1 sets the value but, upon receipt, ignores the property and instead uses a custom value based on PidLidSharingProviderGuid.

<5> Outlook 2007 SP1 sets the value but, upon receipt, ignores the property and instead uses a custom value based on PidLidSharingProviderGuid.

<6> Outlook 2007 SP1 sets the value but, upon receipt, ignores the property and instead uses a custom value based on PidLidSharingProviderGuid.

<7> Outlook 2007 SP1 sets the value but, upon receipt, ignores the property and instead uses a custom value based on PidLidSharingProviderGuid.

<8> Outlook 2007 SP1 sets these properties.

<9> Outlook 2007 SP1 sets this property to the same value as PidLidSharingLocalType, but only uses PidLidSharingLocalType to determine behavior.

<10> Outlook 2007 SP1 sets this property to the same value as PidLidSharingRemoteType, but only uses PidLidSharingLocalType to determine behavior.

<11> Outlook 2007 SP1 sets differing subsets of these properties in different scenarios but their values have no meaning in the context of this protocol.

7 Index