

[MS-OXSHRMSG]: Sharing Message Attachment Schema

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Revision Summary

Date	Revision History	Revision Class	Comments
11/04/2009	1.0.0	Major	Initial Availability
02/10/2010	1.1.0	Minor	Updated the technical content.
05/05/2010	1.1.1	Editorial	Revised and edited the technical content.
08/04/2010	1.2	Minor	Clarified the meaning of the technical content.
11/03/2010	1.3	Minor	Clarified the meaning of the technical content.
03/18/2011	2.0	Major	Significantly changed the technical content.

Table of Contents

1	Introduction	4
1.1	Glossary	4
1.2	References	4
1.2.1	Normative References	4
1.2.2	Informative References	5
1.3	Overview	5
1.4	Relationship to Protocols and Other Structures	5
1.5	Applicability Statement	5
1.6	Versioning and Localization	5
1.7	Vendor-Extensible Fields	5
2	Structures	6
2.1	Sharing Message Schema	6
2.1.1	Sharing Message Attachment Namespace	6
2.1.2	Sharing Message Attachment Processing Instructions	6
2.1.3	t:DataTypeType Simple Type	6
2.1.4	t:InitiatorType Complex Type	7
2.1.5	t:InvitationType Complex Type	7
2.1.6	t:ProviderType Complex Type	7
2.1.7	t:Providers Complex Type	9
2.1.8	tns:SharingMessage Element	9
3	Structure Examples	11
4	Security Considerations	13
4.1	Security Considerations for Implementers	13
4.2	Index of Security Parameters	13
5	Appendix A: Product Behavior	14
6	Change Tracking	15
7	Index	17

1 Introduction

The Sharing Message Attachment Schema defines the schema for a document that is used to establish a sharing relationship between two servers on behalf of client applications. This document contains identification information and encrypted tokens that enable the two servers to authenticate and establish the sharing relationship.

Sections 1.8, 2, and 3 of this specification are normative and contain RFC 2119 language. Sections 1.5 and 1.9 are also normative but cannot contain RFC 2119 language. All other sections and examples in this specification are informative.

1.1 Glossary

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

Hypertext Transfer Protocol (HTTP)
XML

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

shared folder
Uniform Resource Identifier (URI)
XML namespace
XML schema

The following terms are specific to this document:

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

1.2 References

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-OXWSMSHR] Microsoft Corporation, "[Folder Sharing Web Service Protocol Specification](#)", November 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>

[RFC2445] Dawson, F. and Stenerson, D., "Internet Calendaring and Scheduling Core Object Specification (iCalendar)", RFC 2445, November 1998, <http://tools.ietf.org/html/rfc2445>

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

[XMLENC] Eastlake, D., Ed., Reagle, J., Ed., "XML Encryption Syntax and Processing", W3C Recommendation, December 2002, <http://www.w3.org/TR/2002/REC-xmlenc-core-20021210/>

[XMLNS] World Wide Web Consortium, "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation 8 December 2009, <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

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)", March 2007.

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

1.3 Overview

This schema specifies the authentication and identification information that is required for two servers to set up a sharing relationship on behalf of client applications. The sharing message attachment is composed of three main elements: the type of invitation, the e-mail address and name of the initiator, and the sharing invitation.

1.4 Relationship to Protocols and Other Structures

This schema is used by the Folder Sharing Web Service Protocol, as described in [\[MS-OXWSMSHR\]](#), to provide authentication and identification information when a **shared folder** relationship is established between two servers. The operations that provide the encrypted token and folder information that is required by the servers to establish the sharing relationship are described in [\[MS-OXWSMSHR\]](#).

Encrypted data elements of the sharing message structure are described in [\[MS-OXWSMSHR\]](#). The format of the encrypted data that are contained in the encrypted data elements is described in [\[XMLENC\]](#).

1.5 Applicability Statement

The **XML** document that is defined by this schema enables servers to share information on behalf of client applications with less risk of exposing secrets to those client applications. The encrypted data section of the sharing message is passed between the client applications while the information within the sharing message is protected.

1.6 Versioning and Localization

This document covers versioning issues in the following areas:

- **Structure versions:** None.
- **Localization:** None.

1.7 Vendor-Extensible Fields

None.

2 Structures

2.1 Sharing Message Schema

The following sections specify the elements and attributes of the sharing message attachment. The elements and attributes use type definitions from [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#).

2.1.1 Sharing Message Attachment Namespace

This schema defines and references various **XML namespaces** using 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
tns	http://schemas.microsoft.com/exchange/sharing/2008	
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1]
enc	http://www.w3.org/2001/04/xmlenc#	[XMLENC]
ews	http://schemas.microsoft.com/exchange/services/2006/types	[MS-OXWSMSHR]

2.1.2 Sharing Message Attachment Processing Instructions

The following XML processing instruction tag, as specified in [\[XML\]](#) section 2.6, **MUST** appear in the sharing message attachment file.

```
<?xml version="1.0"?>
```

2.1.3 t:DataTypeType Simple Type

The **DataTypeType** simple type defines the valid sharing message attachment types.

```
<xs:simpleType name="DataTypeType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="calendar"
    />
  </xs:restriction>
</xs:simpleType>
```

The following value is defined by the **DataTypeType** simple type.

Value	Meaning
calendar	The sharing message attachment is for a calendar.

2.1.4 t:InitiatorType Complex Type

The **InitiatorType** complex type specifies the name and e-mail address of the entity that initiates the sharing relationship.

```
<xs:complexType name="InitiatorType">
  <xs:sequence>
    <xs:element name="Name"
      type="xs:string"
    />
    <xs:element name="SmtpAddress"
      type="xs:string"
    />
  </xs:sequence>
</xs:complexType>
```

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

Element name	Type	Description
Name	xs:string [XMLSCHEMA2]	The display name of the entity that initiates the sharing relationship.
SmtpAddress	xs:string	The e-mail address of the entity that initiates the sharing relationship.

2.1.5 t:InvitationType Complex Type

The **InvitationType** complex type contains a list of folders to share and the encrypted information that is required to set up the shared folders.

```
<xs:complexType name="InvitationType">
  <xs:sequence>
    <xs:element name="Providers"
      type="t:ProvidersType"
    />
  </xs:sequence>
</xs:complexType>
```

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

Element name	Type	Description
Providers	t:ProvidersType (section 2.1.7)	One or more folders to share and the encrypted information that is required to set up the shared folders.

2.1.6 t:ProviderType Complex Type

The **ProviderType** complex type specifies a shared folder name and the encrypted information required to set up the shared folder.

```

<xs:complexType name="ProviderType">
  <xs:sequence>
    <xs:element name="FolderId"
      type="xs:string"
      maxOccurs="1"
      minOccurs="0"
    />
    <xs:element name="EncryptedSharedFolderDataCollection"
      type="t:ArrayOfEncryptedSharedFolderDataType"
      maxOccurs="1"
      minOccurs="0"
    />
    <xs:element name="BrowseUrl"
      type="xs:string"
      minOccurs="0"
      maxOccurs="1"
    />
    <xs:element name="ICalUrl"
      type="xs:string"
      minOccurs="0"
      maxOccurs="1"
    />
  </xs:sequence>
  <xs:attribute name="Type"
    type="xs:string"
  />
  <xs:attribute name="TargetRecipients"
    type="xs:string"
  />
</xs:complexType>

```

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

Element name	Type	Description
FolderId	xs:string [XMLSCHEMA2]	The identifier for the shared folder.
EncryptedSharedFolderDataCollection	t:ArrayOfEncryptedSharedFolderDataType [XMLENC]	The encrypted authentication token.
BrowseUrl	xs:string	Specifies the URI of a calendar's Web page. MUST be a fully-qualified HTTP URI.
ICalUrl	xs:string	Specifies the URI of the ICalendar format calendar, as

Element name	Type	Description
		specified in [RFC2445] . MUST be a fully-qualified HTTP URI.

The following table lists the attributes that are defined for the **ProviderType** complex type.

Attribute name	Type	Description
Type	xs:string	Specifies the sharing provider type. MUST be either "ms-exchange-external" or "ms-exchange-publish" <1> . If the Type attribute is set to "ms-exchange-external", the FolderID and EncryptedSharedFolderDataCollection elements MUST be set, and the BrowseUri and ICalUri elements MUST NOT be set. If the Type attribute is set to "ms-exchange-publish", the BrowseUri and ICalUri element MUST be set, and the FolderId and EncryptedSharedFolderDataCollection elements MUST NOT be set.
TargetRecipients	xs:string	Specifies a semi-colon delimited list of e-mail addresses that this provider applies to.

2.1.7 t:Providers Complex Type

The **ProvidersType** complex type specifies one or more shared folders and the encrypted data that is required to share the folders.

```
<xs:complexType>
  <xs:sequence>
    <xs:element name="Provider"
      type="t:ProviderType"
      maxOccurs="unbounded"
    />
  </xs:sequence>
</xs:complexType>
```

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

Element name	Type	Description
Provider	t:ProviderType (section 2.1.6)	One or more shared folder providers.

2.1.8 tns:SharingMessage Element

The **SharingMessage** element provides a container for the sharing message attachment elements.

```
<xs:element name="SharingMessage">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="DataType"
        type="t:DataTypeType"
      />
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

```

    <xs:element name="Initiator"
      type="t:InitiatorType"
    />
    <xs:element name="Invitation"
      type="t:InvitationType"
    />
  </xs:sequence>
</xs:complexType>
</xs:element>

```

The following table lists the child elements of the **SharingMessage** element.

Element name	Type	Description
Data Type	t:DataTypeType (section 2.1.3)	The type of the sharing message attachment.
Initiator	t:InitiatorType (section 2.1.4)	The name and e-mail address of the sender of the sharing message attachment.
Invitation	t:InvitationType (section 2.1.5)	The details of the sharing invitation.

3 Structure Examples

The following is the complete **XML schema** for the sharing message attachment XML document.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:t="http://schemas.microsoft.com/exchange/sharing/2008"
xmlns:tns="http://schemas.microsoft.com/exchange/sharing/2008"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:xml="http://www.w3.org/XML/1998/namespace"
xmlns:enc="http://www.w3.org/2001/04/xmlenc#"
xmlns:ews="http://schemas.microsoft.com/exchange/services/2006/types"
targetNamespace="http://schemas.microsoft.com/exchange/sharing/2008"
elementFormDefault="qualified" version="Exchange2010" id="types">

  <xs:import namespace="http://www.w3.org/2001/04/xmlenc#" />
  <xs:import namespace="http://schemas.microsoft.com/services/exchange/2006/types" />

  <xs:simpleType name="DataTypeType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="calendar" />
    </xs:restriction>
  </xs:simpleType>

  <xs:complexType name="InitiatorType">
    <xs:sequence>
      <xs:element name="Name" type="xs:string" />
      <xs:element name="SmtpAddress" type="xs:string" />
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="ProviderType">
    <xs:sequence>
      <xs:element name="FolderId" type="xs:string" />
      <xs:element name="EncryptedSharedFolderDataCollection"
type="ews:ArrayOfEncryptedSharedFolderDataType" />
    </xs:sequence>
    <xs:attribute name="Type" type="xs:string" />
    <xs:attribute name="TargetRecipients" type="xs:string" />
  </xs:complexType>

  <xs:complexType name="ProvidersType">
    <xs:sequence>
      <xs:element name="Provider" type="t:ProviderType" maxOccurs="unbounded" />
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="InvitationType">
    <xs:sequence>
      <xs:element name="Title" type="xs:string" minOccurs="0" />
      <xs:element name="Providers" type="t:ProvidersType" />
    </xs:sequence>
  </xs:complexType>

  <xs:complexType name="RequestType">
    <xs:sequence>
      <xs:element name="Providers" type="t:ProvidersType" />
    </xs:sequence>
  </xs:complexType>
```

```

</xs:complexType>

<xs:complexType name="AcceptOfRequestType">
  <xs:sequence>
    <xs:element name="Title" type="xs:string" minOccurs="0" />
    <xs:element name="Providers" type="t:ProvidersType" />
  </xs:sequence>
</xs:complexType>

<xs:complexType name="DenyOfRequestType">
  <xs:sequence>
    <xs:element name="Providers" type="t:ProvidersType" />
  </xs:sequence>
</xs:complexType>

<xs:element name="SharingMessage">
  <xs:complexType>
    <xs:sequence>
      <xs:element name="DataType" type="t:DataTypeType"/>
      <xs:element name="Initiator" type="t:InitiatorType"/>
      <xs:choice>
        <xs:element name="AcceptOfRequest" type="t:AcceptOfRequestType" />
        <xs:element name="DenyOfRequest" type="t:DenyOfRequestType" />
      <xs:sequence>
        <xs:element name="RequestType" type="t:RequestType" minOccurs="0" />
        <xs:element name="Invitation" type="t:InvitationType" minOccurs="0" />
      </xs:sequence>
    </xs:choice>
  </xs:sequence>
</xs:complexType>
</xs:element>
</xs:schema>

```

4 Security Considerations

4.1 Security Considerations for Implementers

None.

4.2 Index of Security Parameters

None.

5 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft® Exchange Server 2010
- Microsoft® Exchange Server 2010 Service Pack 1 (SP1)

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

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

[<1> Section 2.1.6:](#) Exchange 2010 only accepts the "ms-exchange-external" value for the **Type** attribute.

6 Change Tracking

This section identifies changes that were made to the [MS-OXSHRMSG] protocol document between the November 2010 and March 2011 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

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

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

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

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

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

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

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

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

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

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

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

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

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

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1 Introduction	Added information about which sections of the specification are normative and can contain RFC 2119 language.	Y	Content updated for template compliance.
2.1.1 Sharing Message Attachment Namespace	Updated the section to clarify the XML namespaces used in the document.	N	Content updated.
2.1.2 Sharing Message Attachment Processing Instructions	Clarified the contents of the XML processing instruction.	N	Content updated.
2.1.3 t:DataTypeType Simple Type	Updated the name of the type in the definition.	N	Content updated.
2.1.6 t:ProviderType Complex Type	Updated the description of the Type attribute.	N	Content updated.

7 Index

A

[Applicability](#) 5

C

[Change tracking](#) 15

E

[Examples](#) 11

F

[Fields - vendor-extensible](#) 5

G

[Glossary](#) 4

I

[Implementer - security considerations](#) 13

[Index of security parameters](#) 13

[Informative references](#) 5

[Introduction](#) 4

L

[Localization](#) 5

N

[Normative references](#) 4

O

[Overview](#) 5

P

[Parameters - security index](#) 13

[Product behavior](#) 14

R

References

[informative](#) 5

[normative](#) 4

[Relationship to protocols and other structures](#) 5

S

Security

[implementer considerations](#) 13

[parameter index](#) 13

T

[Tracking changes](#) 15

V

[Vendor-extensible fields](#) 5

[Versioning](#) 5