

[MS-OXSHRMSG]: Sharing Message Attachment Schema

Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft [Open Specification Promise](#) or the [Community Promise](#). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting iplg@microsoft.com.
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

Reservation of Rights. All other rights are reserved, and this notice does not grant any rights other than specifically described above, whether by implication, estoppel, or otherwise.

Tools. The Open Specifications do not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments you are free to take advantage of them. Certain Open Specifications are intended for use in conjunction with publicly available standard specifications and network programming art, and assumes that the reader either is familiar with the aforementioned material or has immediate access to it.

Preliminary Documentation. This Open Specification provides documentation for past and current releases and/or for the pre-release (beta) version of this technology. This Open Specification is final

documentation for past or current releases as specifically noted in the document, as applicable; it is preliminary documentation for the pre-release (beta) versions. Microsoft will release final documentation in connection with the commercial release of the updated or new version of this technology. As the documentation may change between this preliminary version and the final version of this technology, there are risks in relying on preliminary documentation. To the extent that you incur additional development obligations or any other costs as a result of relying on this preliminary documentation, you do so at your own risk.

Revision Summary

Date	Revision History	Revision Class	Comments
11/04/2009	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	2.0	Major	Significantly changed the technical content.
11/03/2010	2.1	Minor	Clarified the meaning of the technical content.
03/18/2011	3.0	Major	Significantly changed the technical content.
08/05/2011	3.1	Minor	Clarified the meaning of the technical content.
10/07/2011	3.1	No change	No changes to the meaning, language, or formatting of the technical content.
01/20/2012	4.0	Major	Significantly changed the technical content.
04/27/2012	4.0	No change	No changes to the meaning, language, or formatting of 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	16

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 1.7 and 2 of this specification are normative and can contain the terms MAY, SHOULD, MUST, MUST NOT, and SHOULD NOT as defined in RFC 2119. 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

References to Microsoft Open Specifications documentation do not include a publishing year because links are to the latest version of the documents, which are updated frequently. References to other documents include a publishing year when one is available.

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](#)".

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

[RFC2445] Dawson, F., and Stenerson, D., "Internet Calendaring and Scheduling Core Object Specification (iCalendar)", RFC 2445, November 1998, <http://www.rfc-editor.org/rfc/rfc2445.txt>

[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] Imamura, T., Dillaway, B., and Simon, E., "XML Encryption Syntax and Processing", W3C Recommendation, December 2002, <http://www.w3.org/TR/2002/REC-xmlenc-core-20021210/>

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, <http://www.w3.org/TR/2009/REC-xml-names-20091208/>

[XMLSCHEMA1] Thompson, H.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](#)".

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

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 BrowseUrl and ICalUrl elements MUST NOT be set. If the Type attribute is set to "ms-exchange-publish", the BrowseUrl and ICalUrl 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:choice>
      <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.

Preliminary

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 15 Technical Preview
- Microsoft® Outlook® 15 Technical Preview

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

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

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

6 Change Tracking

No table of changes is available. The document is either new or has had no changes since its last release.

Preliminary

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 \(synopsis\)](#) 5

P

[Parameters - security index](#) 13

[Product behavior](#) 14

R

[References](#) 4

[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