[MS-DOCSWS]:

SharePoint Document Sharing Web Service Protocol

Revision Summary

Date	Revision History	Revision Class	Comments
1/20/2012	0.1	New	Released new document.
4/11/2012	0.1	None	No changes to the meaning, language, or formatting of the technical content.
7/16/2012	0.1	None	No changes to the meaning, language, or formatting of the technical content.
9/12/2012	0.1	None	No changes to the meaning, language, or formatting of the technical content.
10/8/2012	1.0	Major	Significantly changed the technical content.
2/11/2013	1.1	Minor	Clarified the meaning of the technical content.
7/30/2013	1.1	None	No changes to the meaning, language, or formatting of the technical content.
11/18/2013	1.1	None	No changes to the meaning, language, or formatting of the technical content.
2/10/2014	1.1	None	No changes to the meaning, language, or formatting of the technical content.
4/30/2014	1.2	Minor	Clarified the meaning of the technical content.
7/31/2014	1.2	None	No changes to the meaning, language, or formatting of the technical content.
10/30/2014	1.2	None	No changes to the meaning, language, or formatting of the technical content.
2/26/2016	2.0	Major	Significantly changed the technical content.
7/15/2016	2.0	None	No changes to the meaning, language, or formatting of the technical content.
9/14/2016	2.0	None	No changes to the meaning, language, or formatting of the technical content.
9/19/2017	3.0	Major	Significantly changed the technical content.
7/24/2018	4.0	Major	Significantly changed the technical content.
10/1/2018	5.0	Major	Significantly changed the technical content.
3/19/2019	5.0	None	No changes to the meaning, language, or formatting of the technical content.
6/18/2019	5.0	None	No changes to the meaning, language, or formatting of the technical content.
2/19/2020	5.1	Minor	Clarified the meaning of the technical content.
7/20/2021	6.0	Major	Significantly changed the technical content.
10/5/2021	7.0	Major	Significantly changed the technical content.

Table of Contents

1 Introduction

The SharePoint Document Sharing Web Service Protocol allows protocol clients to enable sharing of **documents** stored in a **document library** and to generate or retrieve **tokenized sharing links** to access content.

Sections 1.5, 1.8, 1.9, 2, and 3 of this specification are normative. All other sections and examples in this specification are informative.

1.1 Glossary

This document uses the following terms:

access control entry (ACE): An entry in an **access control list (ACL)** that contains a set of user rights and a security identifier (SID) that identifies a principal for whom the rights are allowed, denied, or audited.

access control list (ACL): A list of **access control entries (ACEs)** that collectively describe the security rules for authorizing access to some resource; for example, an object or set of objects.

anonymous access link: An implementation of tokenized sharing link that can allow users to gain guest access to content, such as a document or folder, without sign-in when using the specific tokenized sharing link.

document: An object in a content database such as a file, folder, list, or **site**. Each object is identified by a URI.

document library: A type of list that is a container for documents and folders.

folder: A file system construct. File systems organize a volume's data by providing a hierarchy of objects, which are referred to as folders or directories, that contain files and can also contain other folders.

globally unique identifier (GUID): A term used interchangeably with universally unique identifier (UUID) in Microsoft protocol technical documents (TDs). Interchanging the usage of these terms does not imply or require a specific algorithm or mechanism to generate the value. Specifically, the use of this term does not imply or require that the algorithms described in [RFC4122] or [C706] must be used for generating the **GUID**. See also universally unique identifier (UUID).

Hypertext Transfer Protocol (HTTP): An application-level protocol for distributed, collaborative, hypermedia information systems (text, graphic images, sound, video, and other multimedia files) on the World Wide Web.

Hypertext Transfer Protocol Secure (HTTPS): An extension of HTTP that securely encrypts and decrypts web page requests. In some older protocols, "Hypertext Transfer Protocol over Secure Sockets Layer" is still used (Secure Sockets Layer has been deprecated). For more information, see [SSL3] and [RFC5246].

organization access link: An implementation of tokenized sharing link that can grant a signed-in user explicit access to content, such as a document or folder, when using the specific tokenized sharing link, so that they can directly access the content in future requests.

permission: A rule that is associated with an object and that regulates which users can gain access to the object and in what manner. See also rights.

principal: An authenticated entity that initiates a message or channel in a distributed system.

securable object: An object that can have unique security permissions associated with it.

site: A group of related pages and data within a SharePoint site collection. The structure and content of a site is based on a site definition. Also referred to as SharePoint site and web site.

SOAP: A lightweight protocol for exchanging structured information in a decentralized, distributed environment. **SOAP** uses XML technologies to define an extensible messaging framework, which provides a message construct that can be exchanged over a variety of underlying protocols. The framework has been designed to be independent of any particular programming model and other implementation-specific semantics. SOAP 1.2 supersedes SOAP 1.1. See [SOAP1.2-1/2003].

SOAP action: The HTTP request header field used to indicate the intent of the **SOAP** request, using a URI value. See [SOAP1.1] section 6.1.1 for more information.

SOAP body: A container for the payload data being delivered by a SOAP message to its recipient. See [SOAP1.2-1/2007] section 5.3 for more information.

SOAP fault: A container for error and status information within a SOAP message. See [SOAP1.2-1/2007] section 5.4 for more information.

tokenized sharing link: A specialized URL where a unique server generated opaque string value for a resource is embedded within the path or as a parameter, for the purposes of granting access whenever the URL is used to access the content. Depending on the supported abilities of the server, a tokenized sharing link can potentially behave like an anonymous access link, an organization access link, or with other behaviors as defined by the implementor.

Uniform Resource Locator (URL): A string of characters in a standardized format that identifies a document or resource on the World Wide Web. The format is as specified in [RFC1738].

web service: A unit of application logic that provides data and services to other applications and can be called by using standard Internet transport protocols such as **HTTP**, Simple Mail Transfer Protocol (SMTP), or File Transfer Protocol (FTP). Web services can perform functions that range from simple requests to complicated business processes.

Web Services Description Language (WSDL): An XML format for describing network services as a set of endpoints that operate on messages that contain either document-oriented or procedure-oriented information. The operations and messages are described abstractly and are bound to a concrete network protocol and message format in order to define an endpoint. Related concrete endpoints are combined into abstract endpoints, which describe a network service. WSDL is extensible, which allows the description of endpoints and their messages regardless of the message formats or network protocols that are used.

WSDL message: An abstract, typed definition of the data that is communicated during a **WSDL operation** [WSDL]. Also, an element that describes the data being exchanged between web service providers and clients.

WSDL operation: A single action or function of a web service. The execution of a WSDL operation typically requires the exchange of messages between the service requestor and the service provider.

XML namespace: A collection of names that is used to identify elements, types, and attributes in XML documents identified in a URI reference [RFC3986]. A combination of XML namespace and local name allows XML documents to use elements, types, and attributes that have the same names but come from different sources. For more information, see [XMLNS-2ED].

XML namespace prefix: An abbreviated form of an **XML namespace**, as described in [XML].

XML schema: A description of a type of XML document that is typically expressed in terms of constraints on the structure and content of documents of that type, in addition to the basic syntax constraints that are imposed by XML itself. An XML schema provides a view of a document type at a relatively high level of abstraction.

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

1.2 References

Links to a document in the Microsoft Open Specifications library point to the correct section in the most recently published version of the referenced document. However, because individual documents in the library are not updated at the same time, the section numbers in the documents may not match. You can confirm the correct section numbering by checking the Errata.

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.

[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

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

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

[SOAP1.2-1/2007] Gudgin, M., Hadley, M., Mendelsohn, N., et al., "SOAP Version 1.2 Part 1: Messaging Framework (Second Edition)", W3C Recommendation, April 2007, http://www.w3.org/TR/2007/REC-soap12-part1-20070427/

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

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

[XMLSCHEMA1/2] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/2004/REC-xmlschema-1-20041028/

[XMLSCHEMA2/2] Biron, P., and Malhotra, A., Eds., "XML Schema Part 2: Datatypes Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/2004/REC-xmlschema-2-20041028/

1.2.2 Informative References

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

[SOAP1.2-2/2007] Gudgin, M., Hadley, M., Mendelsohn, N., et al., "SOAP Version 1.2 Part 2: Adjuncts (Second Edition)", W3C Recommendation, April 2007, http://www.w3.org/TR/2007/REC-soap12-part2-20070427

1.3 Overview

This protocol enables protocol clients to share documents that are stored on a protocol server. The protocol allows a client to control who to share a **document** with and what role to assign to each sharee. A typical scenario for using this protocol is a document sharing application where a user wants to see various sharing features displayed in the user interface (UI). The user can access a document

on a remote server and is able to grant new users the right to share the document as well as update the existing users' sharing permissions.

The protocol also provides methods for a protocol client to retrieve a document's **Tokenized sharing links**. If the Tokenized sharing link is an **Anonymous access link** then it allows guest users to access the document through the anonymous access link without being authenticated by a protocol server. If the Tokenized sharing link is an **Organization access link** then it allows any members of the organization to access the document through the organization access link.

1.3.1 Roles

This protocol assumes two roles whenever this protocol is used. The protocol client issues requests to a protocol server and the protocol server receives, processes and responds to the requests of the protocol clients.

1.3.1.1 Protocol Server

The protocol server implements the **Web service** described by this protocol. It also maintains **documents**, a permission model that controls how documents can be accessed, and other data that are retrieved or manipulated through the Web service.

1.3.1.2 Protocol Clients

Protocol clients issue commands to the protocol server using the **Web service** methods described in this protocol specification.

1.3.2 Scenarios

The methods described by this protocol enable two types of document sharing scenarios: document sharing role assignments and document **Tokenized sharing link** retrieval.

1.3.2.1 Document Sharing Role Assignments

Protocol clients can find out who is currently sharing a document and then assign new users to share or update existing users' sharing roles. A common usage of the protocol's methods is as follows:

1. The protocol client requests protocol versions supported by the protocol server.

2. The protocol server responds with a set of supported protocol versions.

3. The protocol client asks the protocol server for a summary of all sharing capabilities that are provided by the server.

4. The protocol server responds with a collection of information about the server's sharing capabilities.

5. The protocol client asks the protocol server for detailed information about a particular document.

6. The protocol server responds with detailed information about the document's sharing attributes.

7. The protocol client asks the protocol server for detailed information about all users who currently have permissions to access the document.

8. The protocol server responds with detailed information about all users who currently have access to the document.

9. The protocol client sends a request to the protocol server to grant new users a sharing role or update existing users' role.

10. The protocol server responds with information about any user who fails to be granted new roles or whose existing role fails to be updated.

The following diagram shows the exchange.
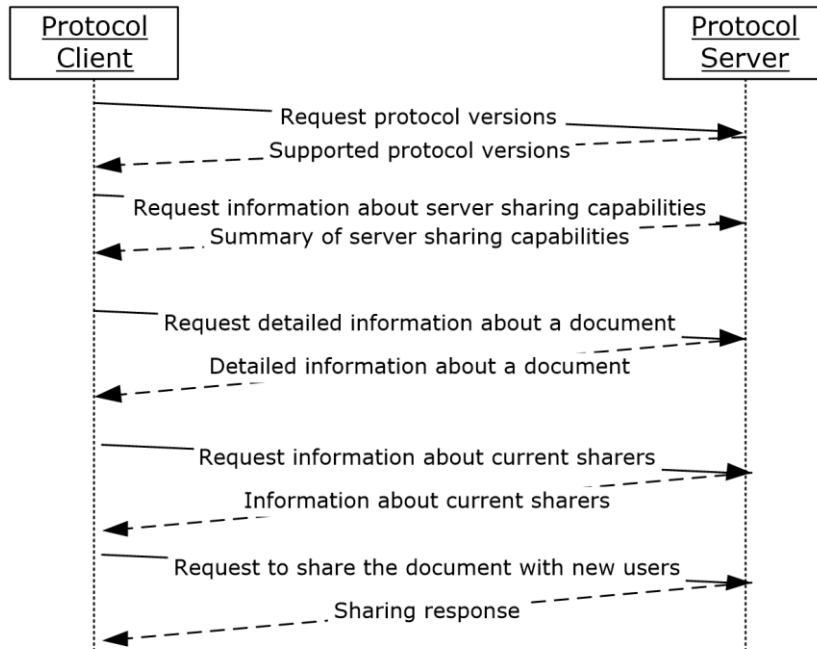
Figure 1: Path of information about document sharing role assignments.

1.3.2.2 Document Tokenized Sharing Link Retrieval

Protocol clients can find out if a protocol server has enabled **tokenized sharing links**, and whether existing tokenized sharing links are available for a particular document. The client can retrieve existing tokenized sharing links or generate new ones, and then share the links with other users who can attempt to use them to gain access to the document. In the case of an **anonymous access link** the users can be guest users, who can then access the document through the link without being authenticated by the server. A common usage of the protocol's methods is as follows:

1. The protocol client requests protocol versions supported by the protocol server.

2. The protocol server responds with a set of supported protocol versions.

3. The protocol client asks the protocol server for a summary of all sharing capabilities that are provided by the server.

4. The protocol server responds with a collection of information about the server's sharing capabilities.

5. The protocol client asks the protocol server for detailed information about a particular document.

6. The protocol server responds with detailed information about the document's sharing attributes.

7. The protocol client sends a request to the protocol server to retrieve tokenized sharing links for a document.

8. The protocol server responds with information about the requested tokenized sharing links.

9. The protocol client sends a request to the protocol server to generate new tokenized sharing links or clear the links for a document.

10. The protocol server responds with results about the request to generate or clear tokenized sharing links

The following diagram shows the exchange.
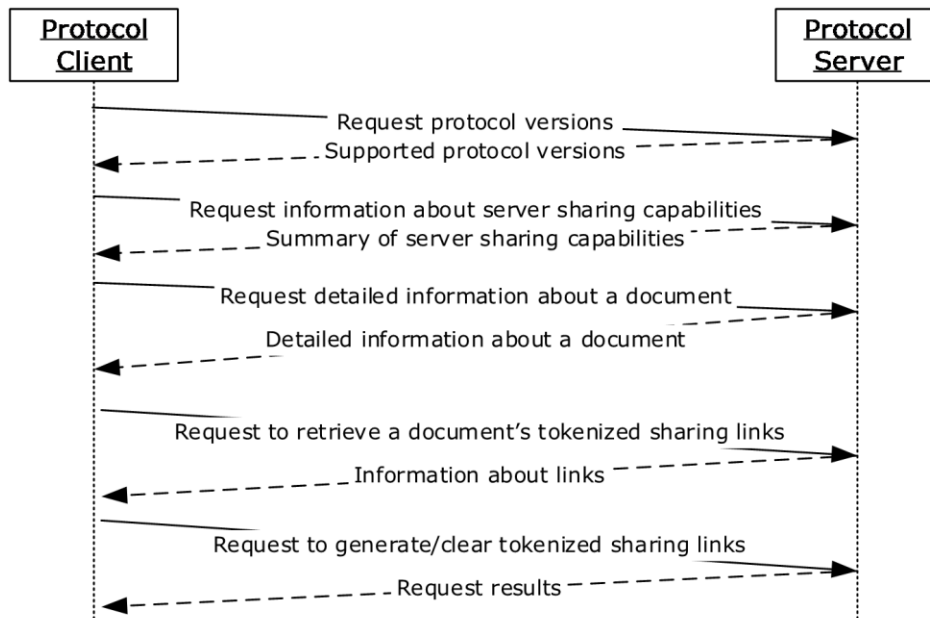
Figure 2: Path of information about document tokenized sharing link retrieval.

1.4 Relationship to Other Protocols

This protocol uses the **SOAP** message protocol for formatting request and response messages, as described in [SOAP1.1], [SOAP1.2-1/2007] and [SOAP1.2-2/2007]. It transmits those messages by using **HTTP**, as described in [RFC2616], or **Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)**, as described in [RFC2818].

The following diagram shows the underlying messaging and transport stack used by the protocol:
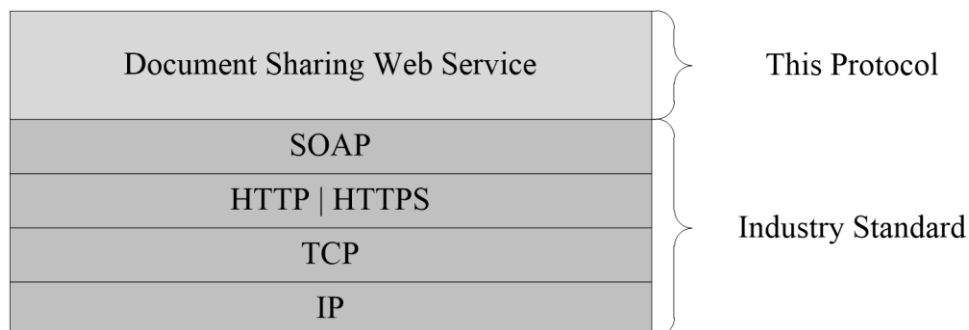
Figure 3: This protocol in relation to other protocols

1.5   Prerequisites/Preconditions

This protocol operates against a **site** that is identified by a **URL** that is known by protocol clients. The protocol server endpoint is formed by appending "_vti_bin/DocumentSharing.svc" to the URL of the site, for example http://www.contoso.com/my/_vti_bin/DocumentSharing.svc.

This protocol assumes that authentication has been performed by the underlying protocols.

1.6   Applicability Statement

This protocol can be used to build a document sharing client application by leveraging server sharing capabilities and integrated features.

1.7   Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

Supported Transports: This protocol uses multiple transports with **SOAP** as described in section 2.1.

1.8   Vendor-Extensible Fields

None.

1.9   Standards Assignments

None.

2 Messages

2.1 Transport

Protocol servers MUST support **SOAP** over **HTTP**. Protocol servers SHOULD additionally support SOAP over **HTTPS** for securing communication with protocol clients.

Protocol messages MUST be formatted as specified either in [SOAP1.1] section 4, "SOAP Envelope", or in [SOAP1.2-1/2007] section 5, "SOAP Message Construct". Protocol server faults MUST be returned either by using HTTP Status Codes as specified in [RFC2616], section 10, "Status Code Definitions", or by using **SOAP faults** as specified either in [SOAP1.1], section 4.4, "SOAP Fault", or in [SOAP1.2-1/2007], section 5.4, "SOAP Fault".

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 specified in [XMLSCHEMA1/2] and [XMLSCHEMA2/2], and **WSDL**, as specified in [WSDL].

2.2.1 Namespaces

This specification defines and references various **XML namespaces** 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/clouddocuments	
tns1	http://schemas.microsoft.com/2003/10/Serialization/Arrays	
tns2	http://schemas.microsoft.com/2003/10/Serialization/	
tns3	http://schemas.microsoft.com/clouddocuments/Imports	
wsaw	http://www.w3.org/2006/05/addressing/wsdl	
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1/2] [XMLSCHEMA2/2]

2.2.2 Messages

This specification does not define any common **WSDL message** definitions.

2.2.3 Elements

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

2.2.4 Complex Types

The following table summarizes the set of common **XML schema** complex type definitions defined by this specification. XML schema complex type definitions that are specific to a particular operation are described with the operation.

Complex type	Description
ArrayOfRole	The **ArrayOfRole** complex type defines a set of sharing roles.
Document	The **Document** complex type defines a document's identifier and its identifier type.
IdentityInfo	The **IdentityInfo** complex type contains properties about an identity which represents an individual or a group.
PictureInfo	The **PictureInfo** complex type defines a picture with its **URL** and dimensions.
PrincipalAttributes	The **PrincipalAttributes** complex type defines additional attributes for a **principal** which is an identity with additional attributes.
PrincipalInfo	The **PrincipalInfo** complex type defines a principal user which represents an identity with additional information.
SharingOperationBaseRequest	The **SharingOperationBaseRequest** complex type contains request parameters that are common to many requests.
SharingServerError	The **SharingServerError** complex type defines information about an error reported by a server. A **SharingServerError** object is sent back to the protocol client along with a **SOAP fault**.

2.2.4.1 ArrayOfRole

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfRole** complex type defines a set of sharing roles.

```
<xs:complexType name="ArrayOfRole" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="Role" type="tns:Role"/>
  </xs:sequence>
</xs:complexType>
```

Role: This element indicates the level of access permissions that are assigned to a user. A role can be one of the following: 'Owner', 'Edit', 'View', or 'None'.

2.2.4.2 Document

Namespace: http://schemas.microsoft.com/clouddocuments

The **Document** complex type defines a document's identifier and its identifier type.

```
<xs:complexType name="Document" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="Identifier" nillable="true" type="xs:string"/>
    <xs:element name="IdentifierType" type="tns:DocumentIdentifierType"/>
  </xs:sequence>
```

```
        </xs:complexType>
```

Identifier: This element contains an identifier that is used to locate a document in a protocol server. The identifier MUST be a web URL.

IdentifierType: This element represents the type of the identifier. The **IdentifierType** MUST be set to 'WebUrl'.

2.2.4.3 IdentityInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **IdentityInfo** complex type contains properties about an identity which represents an individual or a group.

```
<xs:complexType name="IdentityInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="EmailAddress" nillable="true" type="xs:string"/>
    <xs:element name="Identifier" nillable="true" type="xs:string"/>
    <xs:element name="IdentityType" type="tns:IdentityType"/>
  </xs:sequence>
</xs:complexType>
```

EmailAddress: The email address of an identity.

Identifier: The identifier of an identity.

IdentityType: The type of an identity. The **IdentityType** MUST be one of the following: 'Individual', 'IndividualEmail', 'Group', or 'GroupEmail'.

2.2.4.4 PictureInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **PictureInfo** complex type defines a picture with its **URL** and dimensions.

```
<xs:complexType name="PictureInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="Height" type="xs:int"/>
    <xs:element name="ImageType" nillable="true" type="xs:string"/>
    <xs:element name="Url" nillable="true" type="xs:string"/>
    <xs:element name="Width" type="xs:int"/>
  </xs:sequence>
</xs:complexType>
```

Height: The pixel height of a picture.

ImageType: The type of an image such as '.jpeg' or '.gif'.

Url: A URL that represents the location of a picture on a server.

Width: The pixel width of a picture.

2.2.4.5 PrincipalAttributes

Namespace: http://schemas.microsoft.com/clouddocuments

The **PrincipalAttributes** complex type defines additional attributes for a **principal** which is an identity with additional attributes.

```
<xs:complexType name="PrincipalAttributes" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="Picture" nillable="true" type="tns:PictureInfo"/>
    <xs:element name="ProfileUrl" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

Picture: The **PictureInfo** attribute of a principal.

ProfileUrl: The **URL** to a principal's profile page.

2.2.4.6 PrincipalInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **PrincipalInfo** complex type defines a **principal** user which represents an identity with additional information.

```
<xs:complexType name="PrincipalInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="Attributes" nillable="true"
type="tns:PrincipalAttributes"/>
    <xs:element name="DisplayName" nillable="true" type="xs:string"/>
    <xs:element name="IdentityInfo" nillable="true" type="tns:IdentityInfo"/>
  </xs:sequence>
</xs:complexType>
```

Attributes: Additional attributes for a principal.

DisplayName: The display name of a principal.

IdentityInfo: Identity information for a principal.

2.2.4.7 SharingOperationBaseRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **SharingOperationBaseRequest** complex type contains request parameters that are common to many requests.

```
<xs:complexType name="SharingOperationBaseRequest"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="ClientAppId" nillable="true" type="xs:string"/>
    <xs:element name="Market" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

ClientAppId: The identifier of a client application.

Market: The locale of the client in the format of "en-US". This is used to localize strings<1>.

2.2.4.8 SharingServerError

Namespace: http://schemas.microsoft.com/clouddocuments

The **SharingServerError** complex type defines information about an error reported by a server. A **SharingServerError** object is sent back to the protocol client along with a **SOAP fault**.

```
<xs:complexType name="SharingServerError" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="ErrorCode" type="xs:int"/>
    <xs:element minOccurs="0" name="MachineName" nillable="true" type="xs:string"/>
    <xs:element minOccurs="0" name="ServerData" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

ErrorCode: An integer that indicates the type of error. See section 8.

MachineName: The name of the server that reports the error.

ServerData: Additional information about the error, if available.

2.2.5 Simple Types

The following table summarizes the set of common **XML schema** simple type definitions defined by this specification. XML schema simple type definitions that are specific to a particular operation are described with the operation.

Simple type	Description
char	A simple type used to represent a Unicode character. This type MUST NOT be used by this protocol.
DocumentIdentifierType	An enumeration type used to represent the type of a document identifier.
duration	A simple type used to represent a duration. This type MUST NOT be used by this protocol.
guid	A simple type used to represent a **GUID**. This type MUST NOT be used by this protocol.
IdentityType	An enumeration type used to represent the type of a server entity's identity.
PermissionMode	An enumeration type used to represent the type of permission change requested.
Role	An enumeration type used to represent the type of a sharing role.

2.2.5.1 char

Namespace: http://schemas.microsoft.com/2003/10/Serialization/

A simple type used to represent a Unicode character. This type MUST NOT be used by this protocol.

```
<xs:simpleType name="char" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:int"/>
</xs:simpleType>
```

2.2.5.2 DocumentIdentifierType

Namespace: http://schemas.microsoft.com/clouddocuments

An enumeration type used to represent the type of a document identifier.

```
<xs:simpleType name="DocumentIdentifierType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ResourceId"/>
    <xs:enumeration value="DavUrl"/>
    <xs:enumeration value="WebUrl"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **DocumentIdentifierType** simple type.

Value	Meaning
ResourceId	Not used.
DavUrl	Not used.
WebUrl	A **URL** to represent a document's location.

2.2.5.3 duration

Namespace: http://schemas.microsoft.com/2003/10/Serialization/

A simple type used to represent a duration. This type MUST NOT be used by this protocol.

```
<xs:simpleType name="duration" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:duration">
    <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?"/>
    <xs:minInclusive value="-P10675199DT2H48M5.4775808S"/>
    <xs:maxInclusive value="P10675199DT2H48M5.4775807S"/>
  </xs:restriction>
</xs:simpleType>
```

2.2.5.4 guid

Namespace: http://schemas.microsoft.com/2003/10/Serialization/

A simple type used to represent a **GUID**. This type MUST NOT be used by this protocol.

```
<xs:simpleType name="guid" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}"/>
  </xs:restriction>
</xs:simpleType>
```

2.2.5.5 IdentityType

Namespace: http://schemas.microsoft.com/clouddocuments

An enumeration type used to represent the type of a server entity's identity.

```xml
<xs:simpleType name="IdentityType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Individual"/>
    <xs:enumeration value="IndividualEmail"/>
    <xs:enumeration value="Group"/>
    <xs:enumeration value="GroupEmail"/>
    <xs:enumeration value="Network"/>
    <xs:enumeration value="Link"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **IdentityType** simple type.

Value	Meaning
Individual	Denotes an individual identifier.
IndividualEmail	Denotes an individual email identifier.
Group	Denotes a group identifier.
GroupEmail	Denotes a group email identifier.
Network	Not used.
Link	Not used.

2.2.5.6 Role

Namespace: http://schemas.microsoft.com/clouddocuments

An enumeration type used to represent the type of a sharing role.

```xml
<xs:simpleType name="Role" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="View"/>
    <xs:enumeration value="Edit"/>
    <xs:enumeration value="Owner"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **Role** simple type.

Value	Meaning
None	No sharing allowed.
View	Can view a document.
Edit	Can edit a document.
Owner	An owner of a document.

2.2.5.7 PermissionMode

Namespace: http://schemas.microsoft.com/clouddocuments

An enumeration type used to represent the type of permission change requested.

```
<xs:simpleType name="PermissionMode" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Strict"/>
    <xs:enumeration value="Additive"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **PermissionMode** simple type.

Value	Meaning
Strict	Indicates that the new **permissions** to be applied to the **securable object** MUST replace any existing permissions already present on the securable object.
Additive	Indicates that the new permissions to be applied to the securable object MUST be added to any existing permissions already present on the securable object.

2.2.6 Attributes

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

2.2.7 Groups

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

2.2.8 Attribute Groups

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

3   Protocol Details

The protocol client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the protocol client side of this protocol. Calls made by the higher-layer protocol or application are passed directly to the transport, and the results returned by the transport are passed directly back to the higher-layer protocol or application.

Except where specified, protocol clients SHOULD interpret HTTP Status Codes returned by the protocol server as specified in [RFC2616], section 10, "Status Code Definitions".

This protocol allows protocol servers to notify protocol clients of application-level faults by using SOAP faults. Except where specified, these SOAP faults are not significant for interoperability, and protocol clients can interpret them in an implementation-specific manner.

This protocol allows protocol servers to perform implementation-specific authorization checks and notify protocol clients of authorization faults either by using HTTP Status Codes or by using SOAP faults as specified previously in this section.

3.1   Protocol Server Details

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.

This protocol deals with sharing documents and **folders** in a **document library**. A server MUST maintain a repository of documents and folders that are organized hierarchically. A document library contains documents and folders that, in turn, can contain other documents and folders.

A protocol server MUST provide a permission-based access model on securable objects such as documents and folders in the server. This access model specifies which user or system entity has been granted access to an object and the level of permitted access, and SHOULD maintain a list of **access control entries (ACEs)** where each entry specifies the access permissions granted to a particular user or entity. An **access control list (ACL)** can be updated by adding, changing or deleting an entry from the list.

This protocol specifies four abstract sharing roles as shown in the following table.

Role Name	Description
Owner	Permissions to edit, view and delete an object. Permissions to manage an object ACL.
Edit	Permissions to edit and view an object, but no permission to delete the object.
View	Permissions to only view an object.
None	No permission to access an object.

A protocol server MUST map the preceding four roles to appropriate permissions on the server and allow access control entries to be created to match each of these roles.

A protocol server SHOULD also support an access model to allow **Tokenized sharing links**, to allow user to gain access to objects through Tokenized sharing links.

A protocol server MAY support an anonymous access model by providing anonymous access to objects through tokenized sharing links. These **anonymous access links** allow guest users with no prior granted permission to an object to gain access the object anonymously, and also allow authenticated users with no prior granted permission to an object to gain access the object using their authenticated account.

A protocol server MAY support an organization access model by providing authenticated access to objects through tokenized sharing links. These **organization access links<2>** allow authenticated users with no prior granted permission to an object to gain access the object using their authenticated account.

The server SHOULD allow a user with appropriate permissions to retrieve, generate or clear tokenized sharing links to an object.

This protocol supports features to notify users of changes in their sharing roles on a server object. A protocol server SHOULD provide a form of server-based notifications such as email or MicroBlog feed notifications, in order to provide a rich sharing experience to users.

3.1.2 Timers

None.

3.1.3 Initialization

At initialization time, the protocol server MUST begin listening for requests at the respective **URL** addresses given in the message transport (as specified in section 2.1).

3.1.4 Message Processing Events and Sequencing Rules

The following table summarizes the list of operations as defined by this specification.

Operation	Description
GetHostSharingCapabilities	The **GetHostSharingCapabilities** operation is used by a protocol client to retrieve a server's current sharing capabilities.
GetLinks	The **GetLinks** operation is used by a protocol client to retrieve existing **tokenized sharing links** for a document.
GetPermissions	The **GetPermissions** operation is used by a protocol client to retrieve detailed sharing information including the current access control list (ACL) for a document.
GetUserSharingAttributes	The **GetUserSharingAttributes** operation is used by a protocol client to retrieve the current sharing attributes for a document.
GetVersions	The **GetVersions** operation is used by a protocol client to retrieve a list of protocol versions that the server currently supports.
SetLinks	The **SetLinks** operation is used by a protocol client to generate or clear tokenized sharing links for a document. The calling user MUST be a **document** owner in order to call this method successfully.
SetPermissions	The **SetPermissions** operation is used by a protocol client to share a document with other users.

3.1.4.1 GetHostSharingCapabilities

The **GetHostSharingCapabilities** operation is used by a protocol client to retrieve a server's current sharing capabilities.

The following is the **WSDL** port type specification of the **GetHostSharingCapabilities WSDL operation**.

```
<wsdl:operation name="GetHostSharingCapabilities"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabi
lities" message="tns:DocumentSharing_GetHostSharingCapabilities_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabi
litiesResponse" message="tns:DocumentSharing_GetHostSharingCapabilities_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabi
litiesSharingServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetHostSharingCapabilities_SharingServerErrorFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_GetHostSharingCapabilities_InputMessage** request message, and the protocol server responds with a **DocumentSharing_GetHostSharingCapabilities_OutputMessage** response message, as follows:

1. Validates every element in the input message, and sends a SOAP fault message with an error code 1 (section 8) if any element is invalid.

2. Retrieves server capabilities, and returns a **GetHostSharingCapabilities** response element containing the server's sharing capabilities.

3.1.4.1.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_GetHostSharingCapabilities_InputMessage	The request WSDL message for the **GetHostSharingCapabilities WSDL operation**.
DocumentSharing_GetHostSharingCapabilities_OutputMessage	The response WSDL message for the **GetHostSharingCapabilities** WSDL operation.

3.1.4.1.1.1 DocumentSharing_GetHostSharingCapabilities_InputMessage

The request **WSDL message** for the **GetHostSharingCapabilities WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabilities
```

The **SOAP body** contains the **GetHostSharingCapabilities** element.

3.1.4.1.1.2   DocumentSharing_GetHostSharingCapabilities_OutputMessage

The response **WSDL message** for the **GetHostSharingCapabilities WSDL operation**.

The **SOAP body** contains the **GetHostSharingCapabilitiesResponse** element.

3.1.4.1.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
GetHostSharingCapabilities	The input data for the **GetHostSharingCapabilities WSDL operation**.
GetHostSharingCapabilitiesResponse	The result data for the **GetHostSharingCapabilities** WSDL operation.

3.1.4.1.2.1   GetHostSharingCapabilities

The **GetHostSharingCapabilities** element specifies the input data for the **GetHostSharingCapabilities WSDL operation**.

```
<xs:element name="GetHostSharingCapabilities" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="getHostSharingCapabilitiesRequest" nillable="true"
type="tns:GetHostSharingCapabilitiesOperationRequest"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

getHostSharingCapabilitiesRequest: This element contains details of the protocol client's request to retrieve the server's current sharing capabilities.

3.1.4.1.2.2   GetHostSharingCapabilitiesResponse

The **GetHostSharingCapabilitiesResponse** element specifies the result data for the **GetHostSharingCapabilities WSDL operation**.

```
<xs:element name="GetHostSharingCapabilitiesResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetHostSharingCapabilitiesResult" nillable="true"
type="tns:GetHostSharingCapabilitiesOperationResponse"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetHostSharingCapabilitiesResult: This element contains the server's response to the client's request.

3.1.4.1.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
ArrayOfDocumentIdentifierType	A list of document identifier types that the server supports.
ArrayOfPermissionMode	A list of permission modes that the server supports.
GetHostSharingCapabilitiesOperationRequest	A user's request to retrieve a server's sharing capabilities. It contains a base request with the client's application identifier and locale.
GetHostSharingCapabilitiesOperationResponse	A server's response to the request to retrieve the server's sharing capabilities.
HostSharingCapabilities	An entity that contains a server's sharing capability attributes.

3.1.4.1.3.1   GetHostSharingCapabilitiesOperationRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetHostSharingCapabilitiesOperationRequest** complex type contains the protocol client's request to retrieve the server's current sharing capabilities.

```
<xs:complexType name="GetHostSharingCapabilitiesOperationRequest"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
    <xs:element name="Document" nillable="true" type="tns:Document"/>
  </xs:sequence>
</xs:complexType>
```

BaseRequest: A base request embedded in the operation request. It contains a client application identifier and locale.

Document: A **Document** complex object that specifies a document's identifier and its type.

3.1.4.1.3.2   GetHostSharingCapabilitiesOperationResponse

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetHostSharingCapabilitiesOperationResponse** complex type contains the server's response to the protocol client's **GetHostSharingCapabilitiesOperationRequest**.

```
<xs:complexType name="GetHostSharingCapabilitiesOperationResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="HostSharingCapabilities" nillable="true"
type="tns:HostSharingCapabilities"/>
  </xs:sequence>
</xs:complexType>
```

HostSharingCapabilities: A complex type that contains a server's sharing capability attributes.

3.1.4.1.3.3 HostSharingCapabilities

Namespace: http://schemas.microsoft.com/clouddocuments

The **HostSharingCapabilities** complex type contains all of the sharing capability attributes that the protocol server returns.

```
<xs:complexType name="HostSharingCapabilities" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="CustomMessageMaxLength" type="xs:int"/>
    <xs:element name="DefaultsToTokenizedLinksInServerNotifications" type="xs:boolean"/>
    <xs:element name="SupportedDocumentIdentifierTypes" nillable="true"
type="tns:ArrayOfDocumentIdentifierType"/>
    <xs:element name="SupportedPermissionModes" nillable="true"
type="tns:ArrayOfPermissionMode"/>
    <xs:element name="SupportedRoles" nillable="true" type="tns:ArrayOfRole"/>
    <xs:element name="SupportsCustomMessages" type="xs:boolean"/>
    <xs:element name="SupportsDisablingFeedNotifications" type="xs:boolean"/>
    <xs:element name="SupportsDisablingServerNotifications" type="xs:boolean"/>
    <xs:element name="SupportsFeedNotifications" type="xs:boolean"/>
    <xs:element name="SupportsNetworkSharing" type="xs:boolean"/>
    <xs:element name="SupportsResettingTokenizedEditLinks" type="xs:boolean"/>
    <xs:element name="SupportsResettingTokenizedViewLinks" type="xs:boolean"/>
    <xs:element name="SupportsServerNotifications" type="xs:boolean"/>
    <xs:element name="SupportsTogglingOfLinkTypesInServerNotifications" type="xs:boolean"/>
    <xs:element name="SupportsTokenizedEditLinks" type="xs:boolean"/>
    <xs:element name="SupportsTokenizedViewLinks" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

CustomMessageMaxLength: The maximum length of a custom message that a user can provide in a server-distributed sharing notification.

DefaultsToTokenizedLinksInServerNotifications: A Boolean flag that indicates whether to include **tokenized sharing links** as the default instead of regular links in server-distributed sharing notifications. Set to true indicates to include tokenized sharing links as the default, otherwise set to false.

SupportedDocumentIdentifierTypes: A list of document identifier types that are supported by the server.

SupportedPermissionModes: A list of permission modes that are supported by the server.

SupportedRoles: A list of sharing roles that are supported by the server.

SupportsCustomMessages: A Boolean flag indicating whether the server supports custom messages in server-distributed sharing notifications.

SupportsDisablingFeedNotifications: A Boolean flag indicating whether the server supports disabling feed notifications. MUST be set to **false**.

SupportsDisablingServerNotifications: A Boolean flag indicating whether the server supports disabling server-based notifications.

SupportsFeedNotifications: A Boolean flag indicating whether the server supports feed notifications.

SupportsNetworkSharing: A Boolean flag indicating whether the server supports network sharing. MUST be set to **false**.

SupportsResettingTokenizedEditLinks: A Boolean flag indicating whether the server supports resetting tokenized sharing links with edit access.

SupportsResettingTokenizedViewLinks: A Boolean flag indicating whether the server supports resetting tokenized sharing links with view access.

SupportsServerNotifications: A Boolean flag indicating whether the server supports server-based notifications.

SupportsTogglingOfLinkTypesInServerNotifications: A Boolean flag indicating whether the server supports toggling link types in the server-based notifications.

SupportsTokenizedEditLinks: A Boolean flag indicating whether the server supports tokenized sharing links with edit access.

SupportsTokenizedViewLinks: A Boolean flag indicating whether the server supports tokenized sharing links with view access.

3.1.4.1.3.4   ArrayOfDocumentIdentifierType

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfDocumentIdentifierType** complex type represents a list of document identifier types that the server supports.

```
<xs:complexType name="ArrayOfDocumentIdentifierType"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="DocumentIdentifierType"
type="tns:DocumentIdentifierType"/>
  </xs:sequence>
</xs:complexType>
```

DocumentIdentifierType: This element represents the type of a document identifier. MUST be 'WebUrl'.

3.1.4.1.3.5   ArrayOfPermissionMode

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfPermissionMode** complex type represents a list of permission modes that the server supports.

```
<xs:complexType name="ArrayOfPermissionMode" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PermissionMode"
type="tns:PermissionMode"/>
  </xs:sequence>
</xs:complexType>
```

PermissionMode: This element represents a permission mode, as specified in section 2.2.5.7, that the server supports.

3.1.4.1.4 Simple Types

None.

3.1.4.1.5 Attributes

None.

3.1.4.1.6 Groups

None.

3.1.4.1.7 Attribute Groups

None.

3.1.4.2 GetLinks

The **GetLinks** operation is used by a protocol client to retrieve existing **tokenized sharing links** for a document.

The following is the **WSDL** port type specification of the **GetLinks WSDL operation**.

```
<wsdl:operation name="GetLinks" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinks"
message="tns:DocumentSharing_GetLinks_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinksResponse"
message="tns:DocumentSharing_GetLinks_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinksSharingServe
rErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetLinks_SharingServerErrorFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_GetLinks_InputMessage** request message and the server responds with a **DocumentSharing_GetLinks_OutputMessage**, as follows:

1. Validates every element in the input message and sends a SOAP fault message with an error code 1 (section 8) if any element is invalid.

2. If the server does not support tokenized sharing links or the specified document does not provide any tokenized sharing links, sends a SOAP fault message with an error code 17 (section 8).

3. Retrieves existing tokenized sharing links for the document and returns a **GetLinksResponse** element in the **DocumentSharing_GetLinks_OutputMessage** response message.

4. The **GetLinksResponse** element SHOULD only contain a tokenized sharing link with **View** access if the calling user has only the **View** role on the document.

5. The **GetLinksResponse** element SHOULD contain both a tokenized sharing link with **View** access and a tokenized sharing link with **Edit** access if the calling user has the **Edit** role or is an owner of the document.

6. If none of the tokenized sharing links exist for the document, the server SHOULD set both links to be empty.

3.1.4.2.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_GetLinks_InputMessage	The request WSDL message for the **GetLinks WSDL operation**.
DocumentSharing_GetLinks_OutputMessage	The response WSDL message for the **GetLinks** WSDL operation.

3.1.4.2.1.1 DocumentSharing_GetLinks_InputMessage

The request **WSDL message** for the **GetLinks WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinks
```

The **SOAP body** contains the **GetLinks** element.

3.1.4.2.1.2 DocumentSharing_GetLinks_OutputMessage

The response **WSDL message** for the **GetLinks WSDL operation**.

The **SOAP body** contains the **GetLinksResponse** element.

3.1.4.2.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
GetLinks	The input data for the **GetLinks WSDL operation**.
GetLinksResponse	The result data for the **GetLinks** WSDL operation.

3.1.4.2.2.1 GetLinks

The **GetLinks** element specifies the input data for the **GetLinks WSDL operation**.

```
<xs:element name="GetLinks" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="getLinksRequest" nillable="true"
type="tns:GetLinksOperationRequest"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

getLinksRequest: This element contains the **GetLinks** operation request.

3.1.4.2.2.2 GetLinksResponse

The **GetLinksResponse** element specifies the result data for the **GetLinks WSDL operation**.

```xml
<xs:element name="GetLinksResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetLinksResult" nillable="true"
type="tns:GetLinksOperationResponse"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetLinksResult: This element contains the operation response from the **GetLinks** operation request.

3.1.4.2.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
GetLinksOperationRequest	Defines a **GetLinks** operation request.
GetLinksOperationResponse	Defines the response to a **GetLinks** operation request.

3.1.4.2.3.1   GetLinksOperationRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetLinksOperationRequest** complex type defines what is contained in the **GetLinks** operation request.

```xml
<xs:complexType name="GetLinksOperationRequest" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
    <xs:element name="Document" nillable="true" type="tns:Document"/>
  </xs:sequence>
</xs:complexType>
```

BaseRequest: A base request embedded in the **GetLinks** request.

Document: A **Document** element that specifies a document's identifier and its type.

3.1.4.2.3.2   GetLinksOperationResponse

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetLinksOperationResponse** complex type defines what is contained in a **GetLinks** operation response.

```xml
<xs:complexType name="GetLinksOperationResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="TokenizedEditLink" nillable="true" type="xs:string"/>
    <xs:element name="TokenizedViewLink" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

TokenizedEditLink: The **tokenized sharing link** with edit access for a document, if available.

TokenizedViewLink: The tokenized sharing link with view access for a document, if available.

3.1.4.2.4 Simple Types

None.

3.1.4.2.5 Attributes

None.

3.1.4.2.6 Groups

None.

3.1.4.2.7 Attribute Groups

None.

3.1.4.3 GetPermissions

The **GetPermissions** operation is used by a protocol client to retrieve detailed sharing information including the current access control list (ACL) for a document.

The following is the **WSDL** port type specification of the **GetPermissions WSDL operation**.

```
<wsdl:operation name="GetPermissions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissions"
message="tns:DocumentSharing_GetPermissions_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissionsRespon
se" message="tns:DocumentSharing_GetPermissions_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissionsSharin
gServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetPermissions_SharingServerErrorFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_GetPermissions_InputMessage** request message and the server responds with a **DocumentSharing_GetPermissions_OutputMessage**, as follows:

1. Validates every element in the input message, and sends a SOAP fault message with an error code 1 (section 8) if any element is not valid.

2. If the server does not support sharing at the document location, returns a SOAP fault message with an error code 17 (section 8).

3. To complete the operation successfully, the calling user MUST have the permission to manage the document's ACL. If the user does not have the permission, the server MUST return a SOAP fault with an error code 0 (section 8).

4. Retrieves the current ACL for the specified document, creates a **GetPermissionsResponse** element with information for every user in the ACL, and returns a **DocumentSharing_GetPermissions_OutputMessage** response message.

3.1.4.3.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_GetPermissions_InputMessage	The request WSDL message for the **GetPermissions WSDL operation**.
DocumentSharing_GetPermissions_OutputMessage	The response WSDL message for the **GetPermissions** WSDL operation.

3.1.4.3.1.1   DocumentSharing_GetPermissions_InputMessage

The request **WSDL message** for the **GetPermissions WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissions
```

The **SOAP body** contains the **GetPermissions** element.

3.1.4.3.1.2   DocumentSharing_GetPermissions_OutputMessage

The response **WSDL message** for the **GetPermissions WSDL operation**.

The **SOAP body** contains the **GetPermissionsResponse** element.

3.1.4.3.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
GetPermissions	The input data for the **GetPermissions WSDL operation**.
GetPermissionsResponse	The result data for the **GetPermissions** WSDL operation.

3.1.4.3.2.1   GetPermissions

The **GetPermissions** element specifies the input data for the **GetPermissions WSDL operation**.

```
<xs:element name="GetPermissions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="getPermissionsRequest" nillable="true"
type="tns:GetPermissionsOperationRequest"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

getPermissionsRequest: This element contains a **GetPermissions** operation request.

3.1.4.3.2.2   GetPermissionsResponse

The **GetPermissionsResponse** element specifies the result data for the **GetPermissions WSDL operation**.

```
<xs:element name="GetPermissionsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetPermissionsResult" nillable="true"
type="tns:GetPermissionsOperationResponse"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetPermissionsResult: This element contains a response to a **GetPermissions** operation request.

3.1.4.3.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
ArrayOfFolderPermissionInfo	A list of folders and their permissions. Not used.
ArrayOfPermissionInfo	A list of access control entries.
FolderPermissionInfo	Defines a folder and its permissions. Not used.
GetPermissionsOperationRequest	A request to retrieve current detailed sharing information for a document.
GetPermissionsOperationResponse	Contains the response to a request to retrieve the current detailed sharing information for a document.
PermissionInfo	An access control entry.

3.1.4.3.3.1   GetPermissionsOperationRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetPermissionsOperationRequest** complex type contains details for a **GetPermissions** operation request.

```
<xs:complexType name="GetPermissionsOperationRequest"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
    <xs:element name="Document" nillable="true" type="tns:Document"/>
    <xs:element name="PrincipalDetailsView" type="tns:PrincipalDetailsView"/>
  </xs:sequence>
</xs:complexType>
```

BaseRequest: A base request embedded in a **GetPermissions** request.

Document: A **Document** complex object that specifies a document's identifier and its type.

PrincipalDetailsView: This element specifies whether or not additional information will be returned in the response for each principal user in an access control entry.

3.1.4.3.3.2   GetPermissionsOperationResponse

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetPermissionsOperationResponse** complex type contains details for a response to a **GetPermissions** operation request.

```
<xs:complexType name="GetPermissionsOperationResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="CanEditFileLevelPermissions" type="xs:boolean"/>
    <xs:element name="CanEditInheritedPermissions" type="xs:boolean"/>
    <xs:element name="FileLevelPermissions" nillable="true"
type="tns:ArrayOfPermissionInfo"/>
    <xs:element name="InheritedPermissions" nillable="true"
type="tns:ArrayOfFolderPermissionInfo"/>
    <xs:element name="Owner" nillable="true" type="tns:PrincipalInfo"/>
    <xs:element name="PermissionsUrl" nillable="true" type="xs:string"/>
    <xs:element name="TokenizedEditLink" nillable="true" type="xs:string"/>
    <xs:element name="TokenizedViewLink" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

CanEditFileLevelPermissions: A Boolean flag that indicates whether returned **access control entries (ACEs)** can be changed. MUST be **true**.

CanEditInheritedPermissions: A Boolean flag that indicates whether inherited folder permissions can be edited. MUST be **false**.

FileLevelPermissions: A list of access control entries for a document.

InheritedPermissions: A list of inherited folder permissions. This list is not automatically populated.

Owner: Information about a document owner. This is the same as **site** owner information. .

PermissionsUrl: A **URL** pointing to a permission management page on the server for the document.

TokenizedEditLink: Set to the document's **tokenized sharing link** with edit access if the link is available and the calling user has permissions to edit the document.

TokenizedViewLink: Set to the document's tokenized sharing link with view access if the link is available and the calling user has permissions to view the document.

3.1.4.3.3.3   ArrayOfPermissionInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfPermissionInfo** complex type contains a list of access control entries for a document.

```
<xs:complexType name="ArrayOfPermissionInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="PermissionInfo" nillable="true"
type="tns:PermissionInfo"/>
  </xs:sequence>
</xs:complexType>
```

PermissionInfo: This element contains information for one access control entry.

3.1.4.3.3.4 PermissionInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **PermissionInfo** complex type defines an access control entry on a document.

```
<xs:complexType name="PermissionInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="CurrentRole" type="tns:Role"/>
    <xs:element name="MaxAllowedRole" type="tns:Role"/>
    <xs:element name="Principal" nillable="true" type="tns:PrincipalInfo"/>
  </xs:sequence>
</xs:complexType>
```

CurrentRole: The current sharing role of a **principal** user.

MaxAllowedRole: The maximum role that can be assigned to a principal user.

Principal: Information about a principal user.

3.1.4.3.3.5 ArrayOfFolderPermissionInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfFolderPermissionInfo** complex type contains a list of folders and their access control entries from which the **document** has inherited.

```
<xs:complexType name="ArrayOfFolderPermissionInfo"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="FolderPermissionInfo"
nillable="true" type="tns:FolderPermissionInfo"/>
  </xs:sequence>
</xs:complexType>
```

FolderPermissionInfo: This element contains information about a folder and its access control entries.

3.1.4.3.3.6 FolderPermissionInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **FolderPermissionInfo** complex type defines a **folder** and its access control entries.

```
<xs:complexType name="FolderPermissionInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="FolderName" nillable="true" type="xs:string"/>
    <xs:element name="FolderUrl" nillable="true" type="xs:string"/>
    <xs:element name="Permissions" nillable="true" type="tns:ArrayOfPermissionInfo"/>
  </xs:sequence>
</xs:complexType>
```

FolderName: The name of a folder.

FolderUrl: The folder's URL.

Permissions: A list of access control entries for the folder.

3.1.4.3.4 Simple Types

The following table summarizes the **XML schema** simple type definitions that are specific to this operation.

Simple type	Description
PrincipalDetailsView	An enumeration type that can be either '**Basic'** or '**Full'**.

3.1.4.3.4.1 PrincipalDetailsView

Namespace: http://schemas.microsoft.com/clouddocuments

The **PrincipalDetailsView** simple type is an enumeration type that defines whether the **GetPermissions** operation will return additional information for each principal user in the access control list. MUST be set to the '**Basic'** view.

```
<xs:simpleType name="PrincipalDetailsView" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Basic"/>
    <xs:enumeration value="Full"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **PrincipalDetailsView** simple type.

Value	Meaning
Basic	The **Attributes** element will not be populated in a **PrincipalInfo** element.
Full	The **Attributes** element will be populated in a **PrincipalInfo** element.

3.1.4.3.5 Attributes

None.

3.1.4.3.6 Groups

None.

3.1.4.3.7 Attribute Groups

None.

3.1.4.4 GetUserSharingAttributes

The **GetUserSharingAttributes** operation is used by a protocol client to retrieve the current sharing attributes for a document.

The following is the **WSDL** port type specification of the **GetUserSharingAttributes WSDL operation**.

```
<wsdl:operation name="GetUserSharingAttributes"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
```

```
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttrib
utes" message="tns:DocumentSharing_GetUserSharingAttributes_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttrib
utesResponse" message="tns:DocumentSharing_GetUserSharingAttributes_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttrib
utesSharingServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetUserSharingAttributes_SharingServerErrorFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_GetUserSharingAttributes_InputMessage** request message and the server responds with a **DocumentSharing_GetUserSharingAttributes_OutputMessage**, as follows:

1. Validates every element in the input message, and sends a **SOAP fault** message with an error code 1 (section 8) if any element is invalid.

2. If the server does not support sharing at the document location, returns a SOAP fault message with an error code 17 (section 8).

3. Retrieves the document's sharing attributes, and returns a **GetUserSharingAttributesResponse** element in the **DocumentSharing_ GetUserSharingAttributes_OutputMessage** response message.

4. If the server does not support sharing at the document's location or the calling user has no permissions to share the document, the server SHOULD set the **CanShare** attribute to **false** in **GetUserSharingAttributesResponse**, and provide a **DisallowedReason** element.

5. If the calling user is an owner of the document, the server SHOULD set the **CanShare** attribute to **true** in **GetUserSharingAttributesResponse,** and set other attributes properly.

3.1.4.4.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_GetUserSharingAttributes_InputMessage	The request WSDL message for the **GetUserSharingAttributes WSDL operation**.
DocumentSharing_GetUserSharingAttributes_OutputMessage	The response WSDL message for the **GetUserSharingAttributes** WSDL operation.

3.1.4.4.1.1   DocumentSharing_GetUserSharingAttributes_InputMessage

The request **WSDL message** for the **GetUserSharingAttributes WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttributes
```

The **SOAP body** contains the **GetUserSharingAttributes** element.

3.1.4.4.1.2   DocumentSharing_GetUserSharingAttributes_OutputMessage

The response **WSDL message** for the **GetUserSharingAttributes WSDL operation**.

The **SOAP body** contains the **GetUserSharingAttributesResponse** element.

3.1.4.4.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
GetUserSharingAttributes	The input data for the **GetUserSharingAttributes WSDL operation**.
GetUserSharingAttributesResponse	The result data for the **GetUserSharingAttributes** WSDL operation.

3.1.4.4.2.1   GetUserSharingAttributes

The **GetUserSharingAttributes** element specifies the input data for the **GetUserSharingAttributes WSDL operation**.

```
<xs:element name="GetUserSharingAttributes" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="getUserSharingAttributesRequest" nillable="true"
type="tns:GetUserSharingAttributesOperationRequest"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

getUserSharingAttributesRequest: This element contains details for the
GetUserSharingAttributes operation request.

3.1.4.4.2.2   GetUserSharingAttributesResponse

The **GetUserSharingAttributesResponse** element specifies the result data for the
GetUserSharingAttributes WSDL operation.

```
<xs:element name="GetUserSharingAttributesResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="GetUserSharingAttributesResult" nillable="true"
type="tns:GetUserSharingAttributesOperationResponse"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetUserSharingAttributesResult: This element contains details for the **GetUserSharingAttributes**
operation response.

3.1.4.4.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
ArrayOfNetworkInfo	A list of supported networks. Not used.
GetUserSharingAttributesOperationRequest	Contains a request for the **GetUserSharingAttributes** operation.
GetUserSharingAttributesOperationResponse	Contains a response from the **GetUserSharingAttributes** operation.
NetworkInfo	Information about a supported network. Not used.
ShareDisallowedReasonInfo	Information about the reason why sharing is not allowed at the **document** location.

3.1.4.4.3.1   GetUserSharingAttributesOperationRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetUserSharingAttributesOperationRequest** complex type defines a request for the **GetUserSharingAttributes** operation.

```
<xs:complexType name="GetUserSharingAttributesOperationRequest"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
    <xs:element name="Document" nillable="true" type="tns:Document"/>
  </xs:sequence>
</xs:complexType>
```

BaseRequest: A base request embedded in the request.

Document: A **Document** element that specifies a document's identifier and its type.

3.1.4.4.3.2   GetUserSharingAttributesOperationResponse

Namespace: http://schemas.microsoft.com/clouddocuments

The **GetUserSharingAttributesOperationResponse** complex type defines a response from the **GetUserSharingAttributes** operation.

```
<xs:complexType name="GetUserSharingAttributesOperationResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="AvailableNetworks" nillable="true" type="tns:ArrayOfNetworkInfo"/>
    <xs:element name="CanAccessTokenizedEditLink" type="xs:boolean"/>
    <xs:element name="CanAccessTokenizedViewLink" type="xs:boolean"/>
    <xs:element name="CanAddCustomMessage" type="xs:boolean"/>
    <xs:element name="CanResetTokenizedEditLink" type="xs:boolean"/>
    <xs:element name="CanResetTokenizedViewLink" type="xs:boolean"/>
    <xs:element name="CanShare" type="xs:boolean"/>
    <xs:element name="MaxRecipientsPerShare" type="xs:int"/>
    <xs:element name="ShareDisallowedReasonInfo" nillable="true"
type="tns:ShareDisallowedReasonInfo"/>
```

```
    </xs:sequence>
  </xs:complexType>
```

AvailableNetworks: A list of supported networks. MUST be empty.

CanAccessTokenizedEditLink: A Boolean flag indicating whether the calling user can access the **tokenized sharing link** with edit access for the **document**.

CanAccessTokenizedViewLink: A Boolean flag indicating whether the calling user can access the tokenized sharing link with view access for the document.

CanAddCustomMessage: A Boolean flag indicating whether the calling user can add a custom message in server-based notifications for the document.

CanResetTokenizedEditLink: A Boolean flag indicating whether the calling user can reset the tokenized sharing link with edit access for the document.

CanResetTokenizedViewLink: A Boolean flag indicating whether the calling user can reset the tokenized sharing link with view access for the document.

CanShare: A Boolean flag indicating whether the calling user can share the document with other users.

MaxRecipientsPerShare: An integer that specifies the maximum number of users that can share the document.

ShareDisallowedReasonInfo: Contains information about why the document cannot be shared. This element is set only if the 'CanShare' element is set to **false**.

3.1.4.4.3.3   ArrayOfNetworkInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfNetworkInfo** complex type defines a list of networks that the protocol server can support for **document** sharing.

```
    <xs:complexType name="ArrayOfNetworkInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="NetworkInfo" nillable="true"
    type="tns:NetworkInfo"/>
      </xs:sequence>
    </xs:complexType>
```

NetworkInfo: Information about a supported network.

3.1.4.4.3.4   NetworkInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **NetworkInfo** complex type defines a supported network.

```
    <xs:complexType name="NetworkInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:sequence>
        <xs:element name="AvailableRoles" nillable="true" type="tns:ArrayOfRole"/>
        <xs:element name="Network" nillable="true" type="tns:PrincipalInfo"/>
      </xs:sequence>
    </xs:complexType>
```

AvailableRoles: A list of available roles for the network.

Network: Information about the network.

3.1.4.4.3.5   ShareDisallowedReasonInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **ShareDisallowedReasonInfo** complex type contains information about why a document is not allowed to be shared.

```
<xs:complexType name="ShareDisallowedReasonInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="DisallowedReason" type="tns:ShareDisallowedReason"/>
    <xs:element name="ServerData" nillable="true" type="xs:string"/>
    <xs:element name="ServerType" type="tns:ShareServerType"/>
  </xs:sequence>
</xs:complexType>
```

DisallowedReason: The reason why the document is not allowed to be shared.

ServerData: Additional server information. Not used.

ServerType: The type of server.

3.1.4.4.4 Simple Types

The following table summarizes the **XML schema** simple type definitions that are specific to this operation.

Simple type	Description
ShareDisallowedReason	An enumeration type that defines reasons for disallowed sharing.
ShareServerType	An enumeration type that defines the type of a server.

3.1.4.4.4.1   ShareDisallowedReason

Namespace: http://schemas.microsoft.com/clouddocuments

The **ShareDisallowedReason** simple type defines reasons why a **document** is not shareable.

```
<xs:simpleType name="ShareDisallowedReason" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="UserNoAccessToShare"/>
    <xs:enumeration value="UnshareableLocation"/>
    <xs:enumeration value="UnsupportedLocation"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **ShareDisallowedReason** simple type.

Value	Meaning
None	No known reason.

Value	Meaning
UserNoAccessToShare	The user has no access to the document.
UnshareableLocation	The document location is not shareable.
UnsupportedLocation	The document location is not supported.

3.1.4.4.4.2   ShareServerType

Namespace: http://schemas.microsoft.com/clouddocuments

The **ShareServerType** simple type defines the type of a protocol server.

```
<xs:simpleType name="ShareServerType" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Generic"/>
    <xs:enumeration value="SharePointTeamSite"/>
    <xs:enumeration value="SharePointMySite"/>
    <xs:enumeration value="SkyDrive"/>
    <xs:enumeration value="WindowsLiveGroup"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **ShareServerType** simple type.

Value	Meaning
Generic	A generic server.
SharePointTeamSite	A Team Site.
SharePointMySite	A My Site.
SkyDrive	A OneDrive server.
WindowsLiveGroup	A Live Group server.

3.1.4.4.5 Attributes

None.

3.1.4.4.6 Groups

None.

3.1.4.4.7 Attribute Groups

None.

3.1.4.5 GetVersions

The **GetVersions** operation is used by a protocol client to retrieve a list of protocol versions that the server currently supports.

The following is the **WSDL** port type specification of the **GetVersions WSDL operation**.

```
<wsdl:operation name="GetVersions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersions"
message="tns:DocumentSharing_GetVersions_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersionsResponse"
message="tns:DocumentSharing_GetVersions_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersionsSharingSe
rverErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetVersions_SharingServerErrorFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_GetVersions_InputMessage** request message and the server responds with a **DocumentSharing_GetVersions_OutputMessage**, as follows:

▪ Retrieves a list of versions that the protocol server supports for the sharing web service, and returns a **GetVersionsResponse** element in the **DocumentSharing_GetVersions_OutputMessage** response message.

3.1.4.5.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_GetVersions_InputMessage	The request WSDL message for the **GetVersions WSDL operation**.
DocumentSharing_GetVersions_OutputMessage	The response WSDL message for the **GetVersions** WSDL operation.

3.1.4.5.1.1   DocumentSharing_GetVersions_InputMessage

The request **WSDL message** for the **GetVersions WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersions
```

The **SOAP body** contains the **GetVersions** element.

3.1.4.5.1.2   DocumentSharing_GetVersions_OutputMessage

The response **WSDL message** for the **GetVersions WSDL operation**.

The **SOAP body** contains the **GetVersionsResponse** element.

3.1.4.5.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
GetVersions	The input data for the **GetVersions WSDL operation**.
GetVersionsResponse	The result data for the **GetVersions** WSDL operation.

3.1.4.5.2.1   GetVersions

The **GetVersions** element specifies the input data for the **GetVersions WSDL operation**.

```
<xs:element name="GetVersions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence/>
  </xs:complexType>
</xs:element>
```

3.1.4.5.2.2   GetVersionsResponse

The **GetVersionsResponse** element specifies the result data for the **GetVersions WSDL operation**.

```
<xs:element name="GetVersionsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetVersionsResult" nillable="true" type="tns1:ArrayOfstring"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

GetVersionsResult: Contains a list of strings that denote protocol versions that the server currently supports.

3.1.4.5.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
ArrayOfstring	A list of protocol version strings.

3.1.4.5.3.1   ArrayOfstring

Namespace: http://schemas.microsoft.com/2003/10/Serialization/Arrays

The **ArrayOfstring** complex type defines a list of version strings.

```
<xs:complexType name="ArrayOfstring" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
```

```
    </xs:sequence>
  </xs:complexType>
```

string: A version string in the format of "MajorVersion.MinorVersion", for example, "1.0".

3.1.4.5.4 Simple Types

None.

3.1.4.5.5 Attributes

None.

3.1.4.5.6 Groups

None.

3.1.4.5.7 Attribute Groups

None.

3.1.4.6 SetLinks

The **SetLinks** operation is used by a protocol client to generate or clear **tokenized sharing links** for a document. The calling user MUST be a **document** owner in order to call this method successfully.

The following is the **WSDL** port type specification of the **SetLinks WSDL operation**.

```
<wsdl:operation name="SetLinks" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinks"
message="tns:DocumentSharing SetLinks InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinksResponse"
message="tns:DocumentSharing SetLinks OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinksSharingServe
rErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing SetLinks SharingServerErrorFault FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_SetLinks_InputMessage** request message and the server responds with a **DocumentSharing_SetLinks_OutputMessage**, as follows:

1. Validates every element in the input message and sends a **SOAP fault** message with an error code 1 (section 8) if any element is invalid.

2. If the server does not support sharing, or the calling user has no permissions to call this method, the server MUST return a SOAP fault with an error code 0 (section 8).

3. If the server does not support tokenized sharing link support, or the specified document provides no tokenized sharing links, the server MUST return a SOAP fault with an error code 17 (section 8).

4. Generates or clears corresponding tokenized sharing links for the document depending on the requested actions and then returns a **SetLinksResponse** element in the **DocumentSharing_SetLinks_OutputMessage** response message.

5. If the action is to generate links, the server SHOULD check if links already exist, and return existing links before generating new ones.

3.1.4.6.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_SetLinks_InputMessage	The request WSDL message for the **SetLinks WSDL operation**.
DocumentSharing_SetLinks_OutputMessage	The response WSDL message for the **SetLinks** WSDL operation.

3.1.4.6.1.1   DocumentSharing_SetLinks_InputMessage

The request **WSDL message** for the **SetLinks WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinks
```

The **SOAP body** contains the **SetLinks** element.

3.1.4.6.1.2   DocumentSharing_SetLinks_OutputMessage

The response **WSDL message** for the **SetLinks WSDL operation**.

The **SOAP body** contains the **SetLinksResponse** element.

3.1.4.6.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
SetLinks	The input data for the **SetLinks WSDL operation**.
SetLinksResponse	The result data for the **SetLinks** WSDL operation.

3.1.4.6.2.1   SetLinks

The **SetLinks** element specifies the input data for the **SetLinks WSDL operation**.

```
<xs:element name="SetLinks" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
```

```
    <xs:sequence>
      <xs:element minOccurs="0" name="setLinksRequest" nillable="true"
  type="tns:SetLinksOperationRequest"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

setLinksRequest: This element contains the **SetLinks** operation request.

3.1.4.6.2.2   SetLinksResponse

The **SetLinksResponse** element specifies the result data for the **SetLinks WSDL operation**.

```
<xs:element name="SetLinksResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="SetLinksResult" nillable="true"
  type="tns:SetLinksOperationResponse"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

SetLinksResult: This element contains details for the response to a **SetLinks** operation request.

3.1.4.6.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
SetLinksOperationRequest	Defines a request for the **SetLinks** operation.
SetLinksOperationResponse	Defines a response to a **SetLinks** operation request.

3.1.4.6.3.1   SetLinksOperationRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **SetLinksOperationRequest** complex type defines details for a **SetLinks** operation request.

```
<xs:complexType name="SetLinksOperationRequest" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
    <xs:element name="Document" nillable="true" type="tns:Document"/>
    <xs:element name="TokenizedEditLinkAction" type="tns:SetLinkAction"/>
    <xs:element name="TokenizedViewLinkAction" type="tns:SetLinkAction"/>
  </xs:sequence>
</xs:complexType>
```

BaseRequest: A base request embedded in the request.

Document: A **Document** element that specifies a document's identifier and its type.

TokenizedEditLinkAction: Indicates whether to generate or clear the **tokenized sharing link** with edit access for a document.

TokenizedViewLinkAction: Indicates whether to generate or clear the tokenized sharing link with view access for a document.

3.1.4.6.3.2 SetLinksOperationResponse

Namespace: http://schemas.microsoft.com/clouddocuments

The **SetLinksOperationResponse** complex type defines what is contained in the **SetLinks** operation response.

```
<xs:complexType name="SetLinksOperationResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="TokenizedEditLink" nillable="true" type="xs:string"/>
    <xs:element name="TokenizedEditLinkAction" type="tns:SetLinkAction"/>
    <xs:element name="TokenizedViewLink" nillable="true" type="xs:string"/>
    <xs:element name="TokenizedViewLinkAction" type="tns:SetLinkAction"/>
  </xs:sequence>
</xs:complexType>
```

TokenizedEditLink: The **URL** for the **tokenized sharing link** with edit access for a **document**.

TokenizedEditLinkAction: Indicates the action that was taken on the tokenized sharing link with edit access by the server.

TokenizedViewLink: The URL for the tokenized sharing link with view access for a document.

TokenizedViewLinkAction: Indicates the action that was taken on the tokenized sharing link with view access by the server.

3.1.4.6.4 Simple Types

The following table summarizes the **XML schema** simple type definitions that are specific to this operation.

Simple type	Description
SetLinkAction	An enumeration type that defines the type of link actions.

3.1.4.6.4.1 SetLinkAction

Namespace: http://schemas.microsoft.com/clouddocuments

The **SetLinkAction** simple type defines the types of actions that are allowed on a **SetLinks** operation.

```
<xs:simpleType name="SetLinkAction" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="Generate"/>
    <xs:enumeration value="Clear"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **SetLinkAction** simple type.

Value	Meaning
None	No action.
Generate	Retrieve the existing link if available; otherwise, generate a new link.
Clear	Clear the existing link.

3.1.4.6.5 Attributes

None.

3.1.4.6.6 Groups

None.

3.1.4.6.7 Attribute Groups

None.

3.1.4.7 SetPermissions

The **SetPermissions** operation is used by a protocol client to share a document with other users.

The following is the **WSDL** port type specification of the **SetPermissions WSDL operation**.

```
<wsdl:operation name="SetPermissions" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissions"
message="tns:DocumentSharing_SetPermissions_InputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissionsRespon
se" message="tns:DocumentSharing_SetPermissions_OutputMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissionsSharin
gServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_SetPermissions_SharingServerErrorFault_FaultMessage"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
</wsdl:operation>
```

The protocol client sends a **DocumentSharing_SetPermissions_InputMessage** request message and the server responds with a **DocumentSharing_SetPermissions_OutputMessage**, as follows:

1. The server validates every element in the input message, and sends a **SOAP fault** message with an error code 1 (section 8) if any element is not valid.

2. If the server does not support sharing at the document location, it returns a SOAP fault message with an error code 17 (section 8).

3. To complete the operation successfully, the calling user MUST have the permission to manage the document's ACL. If the user does not have the permission, the server MUST return a SOAP fault with an error code 0 (section 8).

4. For each user in the input request, the server MUST remove the current access control entry for the user, and replace it with permissions that match the new role assigned to the user.

5. If requested, the server creates a notification message that includes any custom messages and any **tokenized sharing links** or standard links, and sends the message as an email to each user who has been successfully granted its new role.

6. If any user fails to be granted its new role, the server creates a list of failed users and failure reasons, and embeds the list in a **SetPermissionsResponse** element.

7. The server returns a **SetPermissionsResponse** element in the **DocumentSharing_SetPermissions_OutputMessage** response message.

3.1.4.7.1 Messages

The following table summarizes the set of **WSDL message** definitions that are specific to this operation.

Message	Description
DocumentSharing_SetPermissions_InputMessage	The request WSDL message for the **SetPermissions WSDL operation**.
DocumentSharing_SetPermissions_OutputMessage	The response WSDL message for the **SetPermissions** WSDL operation.

3.1.4.7.1.1 DocumentSharing_SetPermissions_InputMessage

The request **WSDL message** for the **SetPermissions WSDL operation**.

The **SOAP action** value is:

```
http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissions
```

The **SOAP body** contains the **SetPermissions** element.

3.1.4.7.1.2 DocumentSharing_SetPermissions_OutputMessage

The response **WSDL message** for the **SetPermissions WSDL operation**.

The **SOAP body** contains the **SetPermissionsResponse** element.

3.1.4.7.2 Elements

The following table summarizes the **XML schema** element definitions that are specific to this operation.

Element	Description
SetPermissions	The input data for the **SetPermissions WSDL operation**.
SetPermissionsResponse	The result data for the **SetPermissions** WSDL operation.

3.1.4.7.2.1 SetPermissions

The **SetPermissions** element specifies the input data for the **SetPermissions WSDL operation**.

```
<xs:element name="SetPermissions" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="setPermissionsRequest" nillable="true"
type="tns:SetPermissionsOperationRequest"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

setPermissionsRequest: This element contains details for a **SetPermissions** operation request.

3.1.4.7.2.2   SetPermissionsResponse

The **SetPermissionsResponse** element specifies the result data for the **SetPermissions WSDL operation**.

```
<xs:element name="SetPermissionsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" name="SetPermissionsResult" nillable="true"
type="tns:SetPermissionsOperationResponse"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

SetPermissionsResult: This element contains details for the response to a **SetPermissions** operation request.

3.1.4.7.3 Complex Types

The following table summarizes the **XML schema** complex type definitions that are specific to this operation.

Complex type	Description
ArrayOfRecipientErrorInfo	Defines a list of failed users and failure reasons.
ArrayOfRecipientRoleInfo	Contains a list of users and their role assignments.
RecipientErrorInfo	Contains information about one failed user.
RecipientRoleInfo	Defines a user and its role assignment.
SetPermissionsOperationRequest	Defines a **SetPermissions** request.
SetPermissionsOperationResponse	Defines a response to a **SetPermissions** request.

3.1.4.7.3.1   SetPermissionsOperationRequest

Namespace: http://schemas.microsoft.com/clouddocuments

The **SetPermissionsOperationRequest** complex type defines details for a **SetPermissions** operation request.

```
<xs:complexType name="SetPermissionsOperationRequest"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
```

```
        <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
        <xs:element minOccurs="0" name="CustomMessageText" nillable="true" type="xs:string"/>
        <xs:element name="Document" nillable="true" type="tns:Document"/>
        <xs:element name="PermissionMode" type="tns:PermissionMode"/>
        <xs:element name="Recipients" nillable="true" type="tns:ArrayOfRecipientRoleInfo"/>
        <xs:element name="SendFeedNotification" type="xs:boolean"/>
        <xs:element name="SendServerManagedNotification" type="xs:boolean"/>
        <xs:element name="SendTokenizedLinkInNotifications" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
```

BaseRequest: A base request embedded in a **SetPermissions** request.

CustomMessageText: A custom message that will be included in a server email notification.

Document: A **Document** element that specifies a document's identifier and its type.

PermissionMode: A **PermissionMode** element which specifies how the newly requested **permissions** SHOULD be applied to the document.

Recipients: A list of users to share a document with.

SendFeedNotification: A Boolean flag indicating whether to generate a sharing feed notification. This flag is currently ignored, and a sharing feed notification is generated for a successful **SetPermissions** operation.

SendServerManagedNotification: A Boolean flag indicating whether to send an email notification to each user in the **Recipients** list.

SendTokenizedLinkInNotifications: A Boolean flag indicating whether to include **tokenized sharing links** in email notifications.

3.1.4.7.3.2   ArrayOfRecipientRoleInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfRecipientRoleInfo** complex type defines a list of users and their role assignments.

```
<xs:complexType name="ArrayOfRecipientRoleInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="RecipientRoleInfo" nillable="true"
type="tns:RecipientRoleInfo"/>
  </xs:sequence>
</xs:complexType>
```

RecipientRoleInfo: Contains a user and its role assignment.

3.1.4.7.3.3   RecipientRoleInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **RecipientRoleInfo** complex type defines a user and its role assignment.

```
<xs:complexType name="RecipientRoleInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="Recipient" nillable="true" type="tns:IdentityInfo"/>
    <xs:element name="Role" type="tns:Role"/>
  </xs:sequence>
</xs:complexType>
```

Recipient: Contains information about a user.

Role: A sharing role assigned to the user.

3.1.4.7.3.4   SetPermissionsOperationResponse

Namespace: http://schemas.microsoft.com/clouddocuments

The **SetPermissionsOperationResponse** complex type defines details for a response to a **SetPermissions** operation request.

```
<xs:complexType name="SetPermissionsOperationResponse"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" name="FailedRecipients" nillable="true"
type="tns:ArrayOfRecipientErrorInfo"/>
  </xs:sequence>
</xs:complexType>
```

FailedRecipients: Contains a list of users who have failed during role assignments.

3.1.4.7.3.5   ArrayOfRecipientErrorInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **ArrayOfRecipientErrorInfo** complex type defines a list of users whose role assignments have failed during the **SetPermissions** operation.

```
<xs:complexType name="ArrayOfRecipientErrorInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="RecipientErrorInfo" nillable="true"
type="tns:RecipientErrorInfo"/>
  </xs:sequence>
</xs:complexType>
```

RecipientErrorInfo: Contains information for a failed user.

3.1.4.7.3.6   RecipientErrorInfo

Namespace: http://schemas.microsoft.com/clouddocuments

The **RecipientErrorInfo** complex type defines a failed user and the failure reason.

```
<xs:complexType name="RecipientErrorInfo" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="ErrorDetail" nillable="true" type="xs:string"/>
    <xs:element name="ErrorReason" type="tns:RecipientErrorReason"/>
    <xs:element name="Recipient" nillable="true" type="tns:IdentityInfo"/>
    <xs:element minOccurs="0" name="ServerData" nillable="true" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

ErrorDetail: An error message string.

ErrorReason: An error reason type.

Recipient: User information.

ServerData: Additional server data if available. Not used.

3.1.4.7.4 Simple Types

The following table summarizes the **XML schema** simple type definitions that are specific to this operation.

Simple type	Description
RecipientErrorReason	An enumeration type that defines types of error reasons.

3.1.4.7.4.1   RecipientErrorReason

Namespace: http://schemas.microsoft.com/clouddocuments

The **RecipientErrorReason** simple type defines the type of reasons why a user role assignment fails.

```
<xs:simpleType name="RecipientErrorReason" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="UnsupportedRecipientType"/>
    <xs:enumeration value="InvalidRecipientId"/>
    <xs:enumeration value="RecipientUnknown"/>
    <xs:enumeration value="InternalServerError"/>
    <xs:enumeration value="DailySendMailQuotaExceeded"/>
    <xs:enumeration value="HipChallengeRequired"/>
    <xs:enumeration value="BadNetworkState"/>
    <xs:enumeration value="NotInAddressBook"/>
  </xs:restriction>
</xs:simpleType>
```

The following table specifies the allowable values for the **RecipientErrorReason** simple type.

Value	Meaning
UnsupportedRecipientType	The user's type is not supported by the server.
InvalidRecipientId	The recipient Id is invalid.
RecipientUnknown	The recipient is unknown to the server.
InternalServerError	An unknown server error.
DailySendMailQuotaExceeded	Not used.
HipChallengeRequired	Not used.
BadNetworkState	The network is in a bad state.
NotInAddressBook	The recipient is not in the account's address book.

3.1.4.7.5 Attributes

None.

3.1.4.7.6 Groups

None.

3.1.4.7.7 Attribute Groups

None.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4   Protocol Examples

The following sections show examples of protocol requests and responses for scenarios around the document sharing **Web service**.

4.1   Document Sharing Role Assignment

Overall scenario: A protocol client wants to construct appropriate UI to display sharing features and to allow sharing of documents in a SharePoint server. The client displays users who currently have access to a particular document, and then shares the document with new users or update existing users' roles.

4.1.1   GetVersions

A protocol client calls method **GetVersions** to find out if the server supports a protocol version that the client is using. If the server does not support the client's protocol version, the client can upgrade its protocol version to one supported by the server before continuing.

SharePoint currently supports version 1.1 of the document sharing web service protocol.

4.1.1.1   Request

A sample **GetVersions** request message is as follows:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetVersions xmlns="http://schemas.microsoft.com/clouddocuments"/>
  </s:Body>
</s:Envelope>
```

4.1.1.2   Response

A protocol server returns a response message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetVersionsResponse xmlns="http://schemas.microsoft.com/clouddocuments">
      <GetVersionsResult xmlns:a="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <a:string>1.1</a:string>
      </GetVersionsResult>
    </GetVersionsResponse>
  </s:Body>
</s:Envelope>
```

4.1.2   GetHostSharingCapabilities

A protocol client calls method **GetHostSharingCapabilities** to find out what sharing capabilities, in general, a protocol server provides. Depending on what capabilities the server supports, the client can pre-configure its UI to display sharing features accordingly. For example, if the server supports server-based notification, and allows a custom message to be included, the client can provide a choice in UI for a user to choose a notification, and then allow the user to enter a custom message.

4.1.2.1 Request

A sample **GetHostSharingCapabilities** request message is as follows:

```xml
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetHostSharingCapabilities
  xmlns="http://schemas.microsoft.com/clouddocuments">
      <getHostSharingCapabilitiesRequest
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <BaseRequest>
          <ClientAppId i:nil="true"/>
          <Market i:nil="true"/>
        </BaseRequest>
        <Document>
          <Identifier>http://Contoso/my/personal/RajeshPatel/Documents/Tutorial.docx
          </Identifier>
          <IdentifierType>WebUrl</IdentifierType>
        </Document>
      </getHostSharingCapabilitiesRequest>
    </GetHostSharingCapabilities>
  </s:Body>
</s:Envelope>
```

4.1.2.2 Response

A protocol server returns a response message similar to the following:

```xml
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetHostSharingCapabilitiesResponse
  xmlns="http://schemas.microsoft.com/clouddocuments">
      <GetHostSharingCapabilitiesResult
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <HostSharingCapabilities>
          <CustomMessageMaxLength>500</CustomMessageMaxLength>
          <DefaultsToTokenizedLinksInServerNotifications>false
          </DefaultsToTokenizedLinksInServerNotifications>
          <SupportedDocumentIdentifierTypes>
            <DocumentIdentifierType>WebUrl</DocumentIdentifierType>
          </SupportedDocumentIdentifierTypes>
          <SupportedPermissionModes>
            <PermissionMode>Strict</PermissionMode>
            <PermissionMode>Additive</PermissionMode>
          </SupportedPermissionModes>
          <SupportedRoles>
            <Role>Owner</Role>
            <Role>Edit</Role>
            <Role>View</Role>
            <Role>None</Role>
          </SupportedRoles>
          <SupportsCustomMessages>true</SupportsCustomMessages>
          <SupportsDisablingFeedNotifications>false</SupportsDisablingFeedNotifications>
          <SupportsDisablingServerNotifications>true
          </SupportsDisablingServerNotifications>
          <SupportsFeedNotifications>true</SupportsFeedNotifications>
          <SupportsNetworkSharing>false</SupportsNetworkSharing>
          <SupportsResettingTokenizedEditLinks>true</SupportsResettingTokenizedEditLinks>
          <SupportsResettingTokenizedViewLinks>true</SupportsResettingTokenizedViewLinks>
          <SupportsServerNotifications>true</SupportsServerNotifications>
          <SupportsTogglingOfLinkTypesInServerNotifications>true
          </SupportsTogglingOfLinkTypesInServerNotifications>
          <SupportsTokenizedEditLinks>true</SupportsTokenizedEditLinks>
          <SupportsTokenizedViewLinks>true</SupportsTokenizedViewLinks>
```

```
            </HostSharingCapabilities>
          </GetHostSharingCapabilitiesResult>
        </GetHostSharingCapabilitiesResponse>
      </s:Body>
    </s:Envelope>
```

In this example, the protocol server supports toggling link types in a server notification, so the protocol client could display an UI option to include **tokenized sharing links** in notifications.

4.1.3 GetUserSharingAttributes

A protocol client calls method **GetUserSharingAttributes** to find out what sharing attributes apply to a particular document. For example, if a document is not shareable, the protocol client can disable the sharing action and not allow a sharing dialog to be displayed.

4.1.3.1 Request

Assuming that a calling user named 'RajeshPatel' wants to find out the sharing attributes for a document 'Tutorial.docx' in his My Site, the client can send a **GetUserSharingAttributes** request message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetUserSharingAttributes
  xmlns="http://schemas.microsoft.com/clouddocuments">
      <getUserSharingAttributesRequest
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <BaseRequest>
          <ClientAppId i:nil="true"/>
          <Market i:nil="true"/>
        </BaseRequest>
        <Document>
          <Identifier>http://Contoso/my/personal/RajeshPatel/Documents/Tutorial.docx
          </Identifier>
          <IdentifierType>WebUrl</IdentifierType>
        </Document>
      </getUserSharingAttributesRequest>
    </GetUserSharingAttributes>
  </s:Body>
</s:Envelope>
```

4.1.3.2 Response

A protocol server returns a response message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetUserSharingAttributesResponse
  xmlns="http://schemas.microsoft.com/clouddocuments">
      <GetUserSharingAttributesResult
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <AvailableNetworks i:nil="true"/>
        <CanAccessTokenizedEditLink>true</CanAccessTokenizedEditLink>
        <CanAccessTokenizedViewLink>true</CanAccessTokenizedViewLink>
        <CanAddCustomMessage>true</CanAddCustomMessage>
        <CanResetTokenizedEditLink>true</CanResetTokenizedEditLink>
        <CanResetTokenizedViewLink>true</CanResetTokenizedViewLink>
        <CanShare>true</CanShare>
```

```
            <MaxRecipientsPerShare>2147483647</MaxRecipientsPerShare>
            <ShareDisallowedReasonInfo i:nil="true"/>
          </GetUserSharingAttributesResult>
        </GetUserSharingAttributesResponse>
      </s:Body>
   </s:Envelope>
```

Here it is assumed that the calling user is the **site** owner, and the document library supports sharing.

4.1.4 GetPermissions

A protocol client calls method **GetPermissions** to find out who currently has permissions to access a document. The client can display this information for a user to decide whether to share the document with new users or update existing user's roles.

4.1.4.1 Request

In this example, the user 'RajeshPatel' sends a **GetPermissions** request message similar to the following to request the current sharing users for document 'Tutorial.docx'.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetPermissions xmlns="http://schemas.microsoft.com/clouddocuments">
      <getPermissionsRequest xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <BaseRequest>
          <ClientAppId i:nil="true"/>
          <Market i:nil="true"/>
        </BaseRequest>
        <Document>
          <Identifier>http://Contoso/my/personal/RajeshPatel/Documents/Tutorial.docx
          </Identifier>
          <IdentifierType>WebUrl</IdentifierType>
        </Document>
        <PrincipalDetailsView>Basic</PrincipalDetailsView>
      </getPermissionsRequest>
    </GetPermissions>
  </s:Body>
</s:Envelope>
```

4.1.4.2 Response

A protocol server returns a response message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetPermissionsResponse xmlns="http://schemas.microsoft.com/clouddocuments">
      <GetPermissionsResult xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <CanEditFileLevelPermissions>true</CanEditFileLevelPermissions>
        <CanEditInheritedPermissions>false</CanEditInheritedPermissions>
        <FileLevelPermissions>
          <PermissionInfo>
            <CurrentRole>View</CurrentRole>
            <MaxAllowedRole>View</MaxAllowedRole>
            <Principal>
              <Attributes>
                <Picture i:nil="true"/>
                <ProfileUrl i:nil="true"/>
              </Attributes>
              <DisplayName>Erin Hagens</DisplayName>
```

```
                  <IdentityInfo>
                    <EmailAddress>ErinHagens@contoso.com</EmailAddress>
                    <Identifier>ErinHagens</Identifier>
                    <IdentityType>Individual</IdentityType>
                  </IdentityInfo>
                </Principal>
              </PermissionInfo>
              <PermissionInfo>
                <CurrentRole>Owner</CurrentRole>
                <MaxAllowedRole>Edit</MaxAllowedRole>
                <Principal>
                  <Attributes>
                    <Picture i:nil="true"/>
                    <ProfileUrl i:nil="true"/>
                  </Attributes>
                  <DisplayName>Jay Hamlin</DisplayName>
                  <IdentityInfo>
                    <EmailAddress>JayHamlin@contoso.com</EmailAddress>
                    <Identifier>JayHamlin</Identifier>
                    <IdentityType>Individual</IdentityType>
                  </IdentityInfo>
                </Principal>
              </PermissionInfo>
              <PermissionInfo>
                <CurrentRole>Edit</CurrentRole>
                <MaxAllowedRole>Edit</MaxAllowedRole>
                <Principal>
                  <Attributes>
                    <Picture i:nil="true"/>
                    <ProfileUrl i:nil="true"/>
                  </Attributes>
                  <DisplayName>Mary Smith</DisplayName>
                  <IdentityInfo>
                    <EmailAddress>MarySmith@Contoso.com</EmailAddress>
                    <Identifier>MarySmith</Identifier>
                    <IdentityType>Individual</IdentityType>
                  </IdentityInfo>
                </Principal>
              </PermissionInfo>
            </FileLevelPermissions>
            <InheritedPermissions i:nil="true"/>
            <Owner>
              <Attributes>
                <Picture i:nil="true"/>
                <ProfileUrl i:nil="true"/>
              </Attributes>
              <DisplayName>RajeshPatel</DisplayName>
              <IdentityInfo>
                <EmailAddress>RajeshPatel@Contoso.com</EmailAddress>
                <Identifier>Rajesh Patel</Identifier>
                <IdentityType>Individual</IdentityType>
              </IdentityInfo>
            </Owner>

<PermissionsUrl>http://Contoso/my/personal/RajeshPatel/_Layouts/User.aspx?obj={4ecf9578-5ea9-
4e43-a81f-67b99ae8a8ec},9,LISTITEM&amp;LIST={4ecf9578-5ea9-4e43-a81f-
67b99ae8a8ec}</PermissionsUrl>

<TokenizedEditLink>http://Contoso/my/personal/RajeshPatel/ layouts/15/guestaccess.aspx?guesta
ccesstoken=6vxRgoErUsXGee52gbmJUPLvYRPIc4Xsf3%2bUbH3CJVI%3d&amp;docid=1f11068877bdd47f88ef5d6
93143fe45c</TokenizedEditLink>

<TokenizedViewLink>http://Contoso/my/personal/RajeshPatel/ layouts/15/guestaccess.aspx?guesta
ccesstoken=YJ5tDJXL6z2CQI9XT4R5XCM6kmMYayiMxT0msEPJJus%3d&amp;docid=0f11068877bdd47f88ef5d693
143fe45c</TokenizedViewLink>
          </GetPermissionsResult>
        </GetPermissionsResponse>
      </s:Body>
```

```
            </s:Envelope>
```

In this example, the response contains a user who is a co-owner of the document, as well as other users who have the **Edit** or **View** role. It is assumed that the calling user is the **site** owner, whose information is in the **Owner** element.

4.1.5 SetPermissions

A protocol client calls method **SetPermissions** to assign roles to new users or to update existing users' roles.

4.1.5.1 Request

A protocol client sends a request message similar to the following for user 'RajeshPatel' to change the role of a user named 'ErinHagens@contoso.com' to 'Edit', and assign the **View** role to users 'YaelPeled@fabrikam.com' and 'JayHamlin@contoso.com':

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <SetPermissions xmlns="http://schemas.microsoft.com/clouddocuments">
      <setPermissionsRequest xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <BaseRequest>
          <ClientAppId i:nil="true"/>
          <Market i:nil="true"/>
        </BaseRequest>
        <CustomMessageText>This is a test</CustomMessageText>
        <Document>
          <Identifier>http://Contoso/my/personal/RajeshPatel/Documents/Tutorial.docx
          </Identifier>
          <IdentifierType>WebUrl</IdentifierType>
        </Document>
        <PermissionMode>Strict</PermissionMode>
        <Recipients>
          <RecipientRoleInfo>
            <Recipient>
              <EmailAddress i:nil="true"/>
              <Identifier>ErinHagens@contoso.com</Identifier>
              <IdentityType>IndividualMail</IdentityType>
            </Recipient>
            <Role>Edit</Role>
          </RecipientRoleInfo>
          <RecipientRoleInfo>
            <Recipient>
              <EmailAddress i:nil="true"/>
              <Identifier>YaelPeled@fabrikam.com</Identifier>
              <IdentityType>IndividualMail</IdentityType>
            </Recipient>
            <Role>View</Role>
          </RecipientRoleInfo>
          <RecipientRoleInfo>
            <Recipient>
              <EmailAddress i:nil="true"/>
              <Identifier>JayHamlin@contoso.com</Identifier>
              <IdentityType>IndividualMail</IdentityType>
            </Recipient>
            <Role>View</Role>
          </RecipientRoleInfo>
        </Recipients>
        <SendFeedNotification>false</SendFeedNotification>
        <SendServerManagedNotification>true</SendServerManagedNotification>
        <SendTokenizedLinkInNotifications>false</SendTokenizedLinkInNotifications>
      </setPermissionsRequest>
```

```
          </SetPermissions>
      </s:Body>
  </s:Envelope>
```

4.1.5.2 Response

A protocol server returns a response message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <SetPermissionsResponse xmlns="http://schemas.microsoft.com/clouddocuments">
      <SetPermissionsResult xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <FailedRecipients>
          <RecipientErrorInfo>
            <ErrorDetail>Recipient: 'YaelPeled@fabrikam.com' is unknown to the server.
            </ErrorDetail>
            <ErrorReason>RecipientUnknown</ErrorReason>
            <Recipient>
              <EmailAddress i:nil="true"/>
              <Identifier>YaelPeled@fabrikam.com</Identifier>
              <IdentityType>Individual</IdentityType>
            </Recipient>
            <ServerData i:nil="true"/>
          </RecipientErrorInfo>
        </FailedRecipients>
      </SetPermissionsResult>
    </SetPermissionsResponse>
  </s:Body>
</s:Envelope>
```

In this example, the new role for user 'ErinHagens@contoso.com' and 'JayHamlin@contoso.com' was successfully assigned, but the role assignment failed for user 'YaelPeled@fabrikam.com', and the failure reason was provided.

4.2   Document Tokenized Sharing Link Retrieval

Overall scenario: A protocol client wants to construct appropriate UI to generate or retrieve **tokenized sharing links** for a document in a SharePoint server. A client sharing application can combine sharing and tokenized sharing link retrieval in one scenario, but depending on the application, they can be separated.

4.2.1   SetLinks

A protocol client calls method **SetLinks** to generate or clear **tokenized sharing links** for a particular document.

4.2.1.1 Request

In this example, the user 'RajeshPatel' sends a **SetLinks** request message similar to the following to request that the **tokenized sharing links** with edit and view access be generated for document 'Tutorial.docx'.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <SetLinks xmlns="http://schemas.microsoft.com/clouddocuments">
      <setLinksRequest xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
```

```
        <BaseRequest>
          <ClientAppId i:nil="true"/>
          <Market i:nil="true"/>
        </BaseRequest>
        <Document>
          <Identifier>http://Contoso/my/personal/RajeshPatel/Documents/Tutorial.docx
    </Identifier>
          <IdentifierType>WebUrl</IdentifierType>
        </Document>
        <TokenizedEditLinkAction>Generate</TokenizedEditLinkAction>
        <TokenizedViewLinkAction>Generate</TokenizedViewLinkAction>
      </setLinksRequest>
    </SetLinks>
  </s:Body>
</s:Envelope>
```

4.2.1.2 Response

A protocol server returns a response message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <SetLinksResponse xmlns="http://schemas.microsoft.com/clouddocuments">
      <SetLinksResult xmlns:i="http://www.w3.org/2001/XMLSchema-instance">

<TokenizedEditLink>http://Contoso/my/personal/RajeshPatel/_layouts/15/guestaccess.aspx?guesta
ccesstoken=6vxRgoErUsXGee52gbmJUPLvYRPIc4Xsf3%2bUbH3CJVI%3d&amp;docid=1f11068877bdd47f88ef5d6
93143fe45c</TokenizedEditLink>
        <TokenizedEditLinkAction>Generate</TokenizedEditLinkAction>

<TokenizedViewLink>http://Contoso/my/personal/RajeshPatel/ layouts/15/guestaccess.aspx?guesta
ccesstoken=YJ5tDJXL6z2CQI9XT4R5XCM6kmMYayiMxT0msEPJJus%3d&amp;docid=0f11068877bdd47f88ef5d693
143fe45c</TokenizedViewLink>
        <TokenizedViewLinkAction>Generate</TokenizedViewLinkAction>
      </SetLinksResult>
    </SetLinksResponse>
  </s:Body>
</s:Envelope>
```

Here it is assumed that the calling user is an owner of the document and has permissions to generate links for the document.

4.2.2 GetLinks

A protocol client calls method **GetLinks** to retrieve existing links for a particular document.

4.2.2.1 Request

A protocol client sends a **GetLinks** request message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetLinks xmlns="http://schemas.microsoft.com/clouddocuments">
      <getLinksRequest xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <BaseRequest>
          <ClientAppId i:nil="true"/>
          <Market i:nil="true"/>
        </BaseRequest>
        <Document
```

```
            <Identifier>http://Contoso/my/personal/RajeshPatel/Documents/Tutorial.docx
    </Identifier>
            <IdentifierType>WebUrl</IdentifierType>
          </Document>
        </getLinksRequest>
      </GetLinks>
    </s:Body>
  </s:Envelope>
```

4.2.2.2 Response

A protocol server returns a response message similar to the following:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Body>
    <GetLinksResponse xmlns="http://schemas.microsoft.com/clouddocuments">
      <GetLinksResult xmlns:i="http://www.w3.org/2001/XMLSchema-instance">

<TokenizedEditLink>http://Contoso/my/personal/RajeshPatel/_layouts/15/guestaccess.aspx?guesta
ccesstoken=6vxRgoErUsXGee52gbmJUPLvYRPIc4Xsf3%2bUbH3CJVI%3d&amp;docid=1f11068877bdd47f88ef5d6
93143fe45c</TokenizedEditLink>

<TokenizedViewLink>http://Contoso/my/personal/RajeshPatel/_layouts/15/guestaccess.aspx?guesta
ccesstoken=YJ5tDJXL6z2CQI9XT4R5XCM6kmMYayiMxT0msEPJJus%3d&amp;docid=0f11068877bdd47f88ef5d693
143fe45c</TokenizedViewLink>
      </GetLinksResult>
    </GetLinksResponse>
  </s:Body>
</s:Envelope>
```

Here it is assumed that the calling user is an owner or can edit the document, so both of the **tokenized sharing links** are returned. If the calling user can only view the document, then only the tokenized sharing link with view access will be returned.

5   Security

5.1   Security Considerations for Implementers

None.

5.2   Index of Security Parameters

None.

6   Appendix A: Full WSDL

For ease of implementation, the full WSDL is provided in this appendix.

```
<?xml version="1.0" encoding="UTF-8"?>
<wsdl:definitions xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns="http://schemas.microsoft.com/clouddocuments"
xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"
targetNamespace="http://schemas.microsoft.com/clouddocuments"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:types>
    <xs:schema xmlns:tns3="http://schemas.microsoft.com/clouddocuments/Imports"
targetNamespace="http://schemas.microsoft.com/clouddocuments/Imports">
        <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/"/>
        <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
        <xs:import namespace="http://schemas.microsoft.com/clouddocuments"/>
    </xs:schema>
  </wsdl:types>
  <wsdl:portType name="DocumentSharing">
    <wsdl:operation name="GetHostSharingCapabilities">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabi
lities" message="tns:DocumentSharing_GetHostSharingCapabilities_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabi
litiesResponse" message="tns:DocumentSharing_GetHostSharingCapabilities_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabi
litiesSharingServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetHostSharingCapabilities_SharingServerErrorFault_FaultMessage"
/>
    </wsdl:operation>
    <wsdl:operation name="GetUserSharingAttributes">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttrib
utes" message="tns:DocumentSharing_GetUserSharingAttributes_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttrib
utesResponse" message="tns:DocumentSharing GetUserSharingAttributes OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttrib
utesSharingServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetUserSharingAttributes_SharingServerErrorFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetPermissions">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissions"
message="tns:DocumentSharing_GetPermissions_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissionsRespon
se" message="tns:DocumentSharing GetPermissions OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissionsSharin
gServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetPermissions_SharingServerErrorFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="SetPermissions">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissions"
message="tns:DocumentSharing_SetPermissions_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissionsRespon
se" message="tns:DocumentSharing_SetPermissions_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissionsSharin
```

```
gServerErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_SetPermissions_SharingServerErrorFault_FaultMessage"/>

    </wsdl:operation>
    <wsdl:operation name="GetLinks">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinks"
message="tns:DocumentSharing_GetLinks_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinksResponse"
message="tns:DocumentSharing_GetLinks_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinksSharingServe
rErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetLinks_SharingServerErrorFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="SetLinks">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinks"
message="tns:DocumentSharing_SetLinks_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinksResponse"
message="tns:DocumentSharing_SetLinks_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinksSharingServe
rErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_SetLinks_SharingServerErrorFault_FaultMessage"/>
    </wsdl:operation>
    <wsdl:operation name="GetVersions">
      <wsdl:input
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersions"
message="tns:DocumentSharing_GetVersions_InputMessage"/>
      <wsdl:output
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersionsResponse"
message="tns:DocumentSharing_GetVersions_OutputMessage"/>
      <wsdl:fault
wsaw:Action="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersionsSharingSe
rverErrorFault" name="SharingServerErrorFault"
message="tns:DocumentSharing_GetVersions_SharingServerErrorFault_FaultMessage"/>
    </wsdl:operation>
  </wsdl:portType>
  <wsdl:binding name="DefaultBinding_DocumentSharing" type="tns:DocumentSharing">
    <soap:binding transport="http://schemas.xmlsoap.org/soap/http"/>
    <wsdl:operation name="GetHostSharingCapabilities">
      <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetHostSharingCapabil
ities" style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
      <wsdl:fault name="SharingServerErrorFault">
        <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
      </wsdl:fault>
    </wsdl:operation>
    <wsdl:operation name="GetUserSharingAttributes">
      <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetUserSharingAttribu
tes" style="document"/>
      <wsdl:input>
        <soap:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap:body use="literal"/>
      </wsdl:output>
      <wsdl:fault name="SharingServerErrorFault">
        <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
      </wsdl:fault>
```

```
      </wsdl:operation>
      <wsdl:operation name="GetPermissions">
        <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetPermissions"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SharingServerErrorFault">
          <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="SetPermissions">
        <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetPermissions"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SharingServerErrorFault">
          <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="GetLinks">
        <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetLinks"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SharingServerErrorFault">
          <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="SetLinks">
        <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/SetLinks"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SharingServerErrorFault">
          <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
        </wsdl:fault>
      </wsdl:operation>
      <wsdl:operation name="GetVersions">
        <soap:operation
soapAction="http://schemas.microsoft.com/clouddocuments/DocumentSharing/GetVersions"
style="document"/>
        <wsdl:input>
          <soap:body use="literal"/>
        </wsdl:input>
        <wsdl:output>
          <soap:body use="literal"/>
        </wsdl:output>
        <wsdl:fault name="SharingServerErrorFault">
          <soap:fault use="literal" name="SharingServerErrorFault" namespace=""/>
```

```
      </wsdl:fault>
    </wsdl:operation>
  </wsdl:binding>
  <wsdl:message name="DocumentSharing_GetHostSharingCapabilities_InputMessage">
    <wsdl:part name="parameters" element="tns:GetHostSharingCapabilities"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetHostSharingCapabilities_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetHostSharingCapabilitiesResponse"/>
  </wsdl:message>
  <wsdl:message
name="DocumentSharing_GetHostSharingCapabilities_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetLinks_InputMessage">
    <wsdl:part name="parameters" element="tns:GetLinks"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetLinks_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetLinksResponse"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetLinks_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetPermissions_InputMessage">
    <wsdl:part name="parameters" element="tns:GetPermissions"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetPermissions_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetPermissionsResponse"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetPermissions_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetUserSharingAttributes_InputMessage">
    <wsdl:part name="parameters" element="tns:GetUserSharingAttributes"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetUserSharingAttributes_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetUserSharingAttributesResponse"/>
  </wsdl:message>
  <wsdl:message
name="DocumentSharing_GetUserSharingAttributes_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetVersions_InputMessage">
    <wsdl:part name="parameters" element="tns:GetVersions"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetVersions_OutputMessage">
    <wsdl:part name="parameters" element="tns:GetVersionsResponse"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_GetVersions_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_SetLinks_InputMessage">
    <wsdl:part name="parameters" element="tns:SetLinks"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_SetLinks_OutputMessage">
    <wsdl:part name="parameters" element="tns:SetLinksResponse"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_SetLinks_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_SetPermissions_InputMessage">
    <wsdl:part name="parameters" element="tns:SetPermissions"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_SetPermissions_OutputMessage">
    <wsdl:part name="parameters" element="tns:SetPermissionsResponse"/>
  </wsdl:message>
  <wsdl:message name="DocumentSharing_SetPermissions_SharingServerErrorFault_FaultMessage">
    <wsdl:part name="detail" element="tns:SharingServerError"/>
  </wsdl:message>
```

```
</wsdl:definitions>
```

7 Appendix B: Full XML Schema

Schema name	Prefix	Section
http://schemas.microsoft.com/2003/10/Serialization/Arrays	tns1	7.1
http://schemas.microsoft.com/2003/10/Serialization/	tns2	7.2
http://schemas.microsoft.com/clouddocuments	tns	7.3

For ease of implementation, the following sections provide the full XML schema for this protocol.

7.1   http://schemas.microsoft.com/2003/10/Serialization/Arrays Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType name="ArrayOfstring">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="string" nillable="true"
type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfstring" nillable="true" type="tns1:ArrayOfstring"/>
</xs:schema>
```

7.2   http://schemas.microsoft.com/2003/10/Serialization/ Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:tns2="http://schemas.microsoft.com/2003/10/Serialization/"
attributeFormDefault="qualified" elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/2003/10/Serialization/"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="anyType" nillable="true" type="xs:anyType"/>
  <xs:element name="anyURI" nillable="true" type="xs:anyURI"/>
  <xs:element name="base64Binary" nillable="true" type="xs:base64Binary"/>
  <xs:element name="boolean" nillable="true" type="xs:boolean"/>
  <xs:element name="byte" nillable="true" type="xs:byte"/>
  <xs:element name="dateTime" nillable="true" type="xs:dateTime"/>
  <xs:element name="decimal" nillable="true" type="xs:decimal"/>
  <xs:element name="double" nillable="true" type="xs:double"/>
  <xs:element name="float" nillable="true" type="xs:float"/>
  <xs:element name="int" nillable="true" type="xs:int"/>
  <xs:element name="long" nillable="true" type="xs:long"/>
  <xs:element name="QName" nillable="true" type="xs:QName"/>
  <xs:element name="short" nillable="true" type="xs:short"/>
  <xs:element name="string" nillable="true" type="xs:string"/>
  <xs:element name="unsignedByte" nillable="true" type="xs:unsignedByte"/>
  <xs:element name="unsignedInt" nillable="true" type="xs:unsignedInt"/>
  <xs:element name="unsignedLong" nillable="true" type="xs:unsignedLong"/>
  <xs:element name="unsignedShort" nillable="true" type="xs:unsignedShort"/>
  <xs:element name="char" nillable="true" type="tns2:char"/>
  <xs:simpleType name="char">
    <xs:restriction base="xs:int"/>
  </xs:simpleType>
  <xs:element name="duration" nillable="true" type="tns2:duration"/>
  <xs:simpleType name="duration">
    <xs:restriction base="xs:duration">
      <xs:pattern value="\-?P(\d*D)?(T(\d*H)?(\d*M)?(\d*(\.\d*)?S)?)?"/>
      <xs:minInclusive value="-P10675199DT2H48M5.4775808S"/>
```

```
                <xs:maxInclusive value="P10675199DT2H48M5.4775807S"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:element name="guid" nillable="true" type="tns2:guid"/>
        <xs:simpleType name="guid">
            <xs:restriction base="xs:string">
                <xs:pattern value="[\da-fA-F]{8}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{4}-[\da-fA-F]{12}"/>
            </xs:restriction>
        </xs:simpleType>
        <xs:attribute name="FactoryType" type="xs:QName"/>
        <xs:attribute name="Id" type="xs:ID"/>
        <xs:attribute name="Ref" type="xs:IDREF"/>
</xs:schema>
```

7.3   http://schemas.microsoft.com/clouddocuments Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:tns="http://schemas.microsoft.com/clouddocuments"
elementFormDefault="qualified" targetNamespace="http://schemas.microsoft.com/clouddocuments"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:import namespace="http://schemas.microsoft.com/2003/10/Serialization/Arrays"/>
    <xs:element name="GetHostSharingCapabilities">
        <xs:complexType>
            <xs:sequence>
                <xs:element minOccurs="0" name="getHostSharingCapabilitiesRequest" nillable="true"
type="tns:GetHostSharingCapabilitiesOperationRequest"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:complexType name="GetHostSharingCapabilitiesOperationRequest">
        <xs:sequence>
            <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
            <xs:element name="Document" nillable="true" type="tns:Document"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="GetHostSharingCapabilitiesOperationRequest" nillable="true"
type="tns:GetHostSharingCapabilitiesOperationRequest"/>
    <xs:complexType name="SharingOperationBaseRequest">
        <xs:sequence>
            <xs:element name="ClientAppId" nillable="true" type="xs:string"/>
            <xs:element name="Market" nillable="true" type="xs:string"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="SharingOperationBaseRequest" nillable="true"
type="tns:SharingOperationBaseRequest"/>
    <xs:complexType name="Document">
        <xs:sequence>
            <xs:element name="Identifier" nillable="true" type="xs:string"/>
            <xs:element name="IdentifierType" type="tns:DocumentIdentifierType"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="Document" nillable="true" type="tns:Document"/>
    <xs:simpleType name="DocumentIdentifierType">
        <xs:restriction base="xs:string">
            <xs:enumeration value="ResourceId"/>
            <xs:enumeration value="DavUrl"/>
            <xs:enumeration value="WebUrl"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:element name="DocumentIdentifierType" nillable="true"
type="tns:DocumentIdentifierType"/>
    <xs:element name="GetHostSharingCapabilitiesResponse">
        <xs:complexType>
            <xs:sequence>
                <xs:element minOccurs="0" name="GetHostSharingCapabilitiesResult" nillable="true"
type="tns:GetHostSharingCapabilitiesOperationResponse"/>
```

```xml
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:complexType name="GetHostSharingCapabilitiesOperationResponse">
      <xs:sequence>
        <xs:element name="HostSharingCapabilities" nillable="true"
type="tns:HostSharingCapabilities"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="GetHostSharingCapabilitiesOperationResponse" nillable="true"
type="tns:GetHostSharingCapabilitiesOperationResponse"/>
    <xs:complexType name="HostSharingCapabilities">
      <xs:sequence>
        <xs:element name="CustomMessageMaxLength" type="xs:int"/>
        <xs:element name="DefaultsToTokenizedLinksInServerNotifications" type="xs:boolean"/>
        <xs:element name="SupportedDocumentIdentifierTypes" nillable="true"
type="tns:ArrayOfDocumentIdentifierType"/>
        <xs:element name="SupportedPermissionModes" nillable="true"
type="tns:ArrayOfPermissionMode"/>
        <xs:element name="SupportedRoles" nillable="true" type="tns:ArrayOfRole"/>
        <xs:element name="SupportsCustomMessages" type="xs:boolean"/>
        <xs:element name="SupportsDisablingFeedNotifications" type="xs:boolean"/>
        <xs:element name="SupportsDisablingServerNotifications" type="xs:boolean"/>
        <xs:element name="SupportsFeedNotifications" type="xs:boolean"/>
        <xs:element name="SupportsNetworkSharing" type="xs:boolean"/>
        <xs:element name="SupportsResettingTokenizedEditLinks" type="xs:boolean"/>
        <xs:element name="SupportsResettingTokenizedViewLinks" type="xs:boolean"/>
        <xs:element name="SupportsServerNotifications" type="xs:boolean"/>
        <xs:element name="SupportsTogglingOfLinkTypesInServerNotifications" type="xs:boolean"/>
        <xs:element name="SupportsTokenizedEditLinks" type="xs:boolean"/>
        <xs:element name="SupportsTokenizedViewLinks" type="xs:boolean"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="HostSharingCapabilities" nillable="true"
type="tns:HostSharingCapabilities"/>
    <xs:complexType name="ArrayOfDocumentIdentifierType">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="DocumentIdentifierType"
type="tns:DocumentIdentifierType"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfDocumentIdentifierType" nillable="true"
type="tns:ArrayOfDocumentIdentifierType"/>
    <xs:complexType name="ArrayOfPermissionMode">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="PermissionMode"
type="tns:PermissionMode"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfPermissionMode" nillable="true" type="tns:ArrayOfPermissionMode"/>
    <xs:simpleType name="PermissionMode">
      <xs:restriction base="xs:string">
        <xs:enumeration value="Strict"/>
        <xs:enumeration value="Additive"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:element name="PermissionMode" nillable="true" type="tns:PermissionMode"/>
    <xs:complexType name="ArrayOfRole">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="Role" type="tns:Role"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfRole" nillable="true" type="tns:ArrayOfRole"/>
    <xs:simpleType name="Role">
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="View"/>
        <xs:enumeration value="Edit"/>
        <xs:enumeration value="Owner"/>
```

```
      </xs:restriction>
    </xs:simpleType>
    <xs:element name="Role" nillable="true" type="tns:Role"/>
    <xs:complexType name="SharingServerError">
      <xs:sequence>
        <xs:element name="ErrorCode" type="xs:int"/>
        <xs:element minOccurs="0" name="MachineName" nillable="true" type="xs:string"/>
        <xs:element minOccurs="0" name="ServerData" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="SharingServerError" nillable="true" type="tns:SharingServerError"/>
    <xs:element name="GetUserSharingAttributes">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" name="getUserSharingAttributesRequest" nillable="true"
type="tns:GetUserSharingAttributesOperationRequest"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:complexType name="GetUserSharingAttributesOperationRequest">
      <xs:sequence>
        <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
        <xs:element name="Document" nillable="true" type="tns:Document"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="GetUserSharingAttributesOperationRequest" nillable="true"
type="tns:GetUserSharingAttributesOperationRequest"/>
    <xs:element name="GetUserSharingAttributesResponse">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" name="GetUserSharingAttributesResult" nillable="true"
type="tns:GetUserSharingAttributesOperationResponse"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
    <xs:complexType name="GetUserSharingAttributesOperationResponse">
      <xs:sequence>
        <xs:element name="AvailableNetworks" nillable="true" type="tns:ArrayOfNetworkInfo"/>
        <xs:element name="CanAccessTokenizedEditLink" type="xs:boolean"/>
        <xs:element name="CanAccessTokenizedViewLink" type="xs:boolean"/>
        <xs:element name="CanAddCustomMessage" type="xs:boolean"/>
        <xs:element name="CanResetTokenizedEditLink" type="xs:boolean"/>
        <xs:element name="CanResetTokenizedViewLink" type="xs:boolean"/>
        <xs:element name="CanShare" type="xs:boolean"/>
        <xs:element name="MaxRecipientsPerShare" type="xs:int"/>
        <xs:element name="ShareDisallowedReasonInfo" nillable="true"
type="tns:ShareDisallowedReasonInfo"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="GetUserSharingAttributesOperationResponse" nillable="true"
type="tns:GetUserSharingAttributesOperationResponse"/>
    <xs:complexType name="ArrayOfNetworkInfo">
      <xs:sequence>
        <xs:element minOccurs="0" maxOccurs="unbounded" name="NetworkInfo" nillable="true"
type="tns:NetworkInfo"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ArrayOfNetworkInfo" nillable="true" type="tns:ArrayOfNetworkInfo"/>
    <xs:complexType name="NetworkInfo">
      <xs:sequence>
        <xs:element name="AvailableRoles" nillable="true" type="tns:ArrayOfRole"/>
        <xs:element name="Network" nillable="true" type="tns:PrincipalInfo"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="NetworkInfo" nillable="true" type="tns:NetworkInfo"/>
    <xs:complexType name="PrincipalInfo">
      <xs:sequence>
        <xs:element minOccurs="0" name="Attributes" nillable="true"
type="tns:PrincipalAttributes"/>
```

```
        <xs:element name="DisplayName" nillable="true" type="xs:string"/>
        <xs:element name="IdentityInfo" nillable="true" type="tns:IdentityInfo"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="PrincipalInfo" nillable="true" type="tns:PrincipalInfo"/>
    <xs:complexType name="PrincipalAttributes">
      <xs:sequence>
        <xs:element name="Picture" nillable="true" type="tns:PictureInfo"/>
        <xs:element name="ProfileUrl" nillable="true" type="xs:string"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="PrincipalAttributes" nillable="true" type="tns:PrincipalAttributes"/>
    <xs:complexType name="PictureInfo">
      <xs:sequence>
        <xs:element name="Height" type="xs:int"/>
        <xs:element name="ImageType" nillable="true" type="xs:string"/>
        <xs:element name="Url" nillable="true" type="xs:string"/>
        <xs:element name="Width" type="xs:int"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="PictureInfo" nillable="true" type="tns:PictureInfo"/>
    <xs:complexType name="IdentityInfo">
      <xs:sequence>
        <xs:element name="EmailAddress" nillable="true" type="xs:string"/>
        <xs:element name="Identifier" nillable="true" type="xs:string"/>
        <xs:element name="IdentityType" type="tns:IdentityType"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="IdentityInfo" nillable="true" type="tns:IdentityInfo"/>
    <xs:simpleType name="IdentityType">
      <xs:restriction base="xs:string">
        <xs:enumeration value="Individual"/>
        <xs:enumeration value="IndividualEmail"/>
        <xs:enumeration value="Group"/>
        <xs:enumeration value="GroupEmail"/>
        <xs:enumeration value="Network"/>
        <xs:enumeration value="Link"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:element name="IdentityType" nillable="true" type="tns:IdentityType"/>
    <xs:complexType name="ShareDisallowedReasonInfo">
      <xs:sequence>
        <xs:element name="DisallowedReason" type="tns:ShareDisallowedReason"/>
        <xs:element name="ServerData" nillable="true" type="xs:string"/>
        <xs:element name="ServerType" type="tns:ShareServerType"/>
      </xs:sequence>
    </xs:complexType>
    <xs:element name="ShareDisallowedReasonInfo" nillable="true"
type="tns:ShareDisallowedReasonInfo"/>
    <xs:simpleType name="ShareDisallowedReason">
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="UserNoAccessToShare"/>
        <xs:enumeration value="UnshareableLocation"/>
        <xs:enumeration value="UnsupportedLocation"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:element name="ShareDisallowedReason" nillable="true" type="tns:ShareDisallowedReason"/>
    <xs:simpleType name="ShareServerType">
      <xs:restriction base="xs:string">
        <xs:enumeration value="Generic"/>
        <xs:enumeration value="SharePointTeamSite"/>
        <xs:enumeration value="SharePointMySite"/>
        <xs:enumeration value="SkyDrive"/>
        <xs:enumeration value="WindowsLiveGroup"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:element name="ShareServerType" nillable="true" type="tns:ShareServerType"/>
    <xs:element name="GetPermissions">
```

```
          <xs:complexType>
            <xs:sequence>
              <xs:element minOccurs="0" name="getPermissionsRequest" nillable="true"
type="tns:GetPermissionsOperationRequest"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:complexType name="GetPermissionsOperationRequest">
          <xs:sequence>
            <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
            <xs:element name="Document" nillable="true" type="tns:Document"/>
            <xs:element name="PrincipalDetailsView" type="tns:PrincipalDetailsView"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="GetPermissionsOperationRequest" nillable="true"
type="tns:GetPermissionsOperationRequest"/>
        <xs:simpleType name="PrincipalDetailsView">
          <xs:restriction base="xs:string">
            <xs:enumeration value="Basic"/>
            <xs:enumeration value="Full"/>
          </xs:restriction>
        </xs:simpleType>
        <xs:element name="PrincipalDetailsView" nillable="true" type="tns:PrincipalDetailsView"/>
        <xs:element name="GetPermissionsResponse">
          <xs:complexType>
            <xs:sequence>
              <xs:element minOccurs="0" name="GetPermissionsResult" nillable="true"
type="tns:GetPermissionsOperationResponse"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:complexType name="GetPermissionsOperationResponse">
          <xs:sequence>
            <xs:element name="CanEditFileLevelPermissions" type="xs:boolean"/>
            <xs:element name="CanEditInheritedPermissions" type="xs:boolean"/>
            <xs:element name="FileLevelPermissions" nillable="true"
type="tns:ArrayOfPermissionInfo"/>
            <xs:element name="InheritedPermissions" nillable="true"
type="tns:ArrayOfFolderPermissionInfo"/>
            <xs:element name="Owner" nillable="true" type="tns:PrincipalInfo"/>
            <xs:element name="PermissionsUrl" nillable="true" type="xs:string"/>
            <xs:element name="TokenizedEditLink" nillable="true" type="xs:string"/>
            <xs:element name="TokenizedViewLink" nillable="true" type="xs:string"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="GetPermissionsOperationResponse" nillable="true"
type="tns:GetPermissionsOperationResponse"/>
        <xs:complexType name="ArrayOfPermissionInfo">
          <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded" name="PermissionInfo" nillable="true"
type="tns:PermissionInfo"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="ArrayOfPermissionInfo" nillable="true" type="tns:ArrayOfPermissionInfo"/>
        <xs:complexType name="PermissionInfo">
          <xs:sequence>
            <xs:element name="CurrentRole" type="tns:Role"/>
            <xs:element name="MaxAllowedRole" type="tns:Role"/>
            <xs:element name="Principal" nillable="true" type="tns:PrincipalInfo"/>
          </xs:sequence>
        </xs:complexType>
        <xs:element name="PermissionInfo" nillable="true" type="tns:PermissionInfo"/>
        <xs:complexType name="ArrayOfFolderPermissionInfo">
          <xs:sequence>
            <xs:element minOccurs="0" maxOccurs="unbounded" name="FolderPermissionInfo"
nillable="true" type="tns:FolderPermissionInfo"/>
          </xs:sequence>
        </xs:complexType>
```

```xml
      <xs:element name="ArrayOfFolderPermissionInfo" nillable="true"
type="tns:ArrayOfFolderPermissionInfo"/>
  <xs:complexType name="FolderPermissionInfo">
    <xs:sequence>
      <xs:element name="FolderName" nillable="true" type="xs:string"/>
      <xs:element name="FolderUrl" nillable="true" type="xs:string"/>
      <xs:element name="Permissions" nillable="true" type="tns:ArrayOfPermissionInfo"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="FolderPermissionInfo" nillable="true" type="tns:FolderPermissionInfo"/>
  <xs:element name="SetPermissions">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="setPermissionsRequest" nillable="true"
type="tns:SetPermissionsOperationRequest"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="SetPermissionsOperationRequest">
    <xs:sequence>
      <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
      <xs:element minOccurs="0" name="CustomMessageText" nillable="true" type="xs:string"/>
      <xs:element name="Document" nillable="true" type="tns:Document"/>
      <xs:element name="PermissionMode" type="tns:PermissionMode"/>
      <xs:element name="Recipients" nillable="true" type="tns:ArrayOfRecipientRoleInfo"/>
      <xs:element name="SendFeedNotification" type="xs:boolean"/>
      <xs:element name="SendServerManagedNotification" type="xs:boolean"/>
      <xs:element name="SendTokenizedLinkInNotifications" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SetPermissionsOperationRequest" nillable="true"
type="tns:SetPermissionsOperationRequest"/>
  <xs:complexType name="ArrayOfRecipientRoleInfo">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="RecipientRoleInfo"
nillable="true" type="tns:RecipientRoleInfo"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="ArrayOfRecipientRoleInfo" nillable="true"
type="tns:ArrayOfRecipientRoleInfo"/>
  <xs:complexType name="RecipientRoleInfo">
    <xs:sequence>
      <xs:element name="Recipient" nillable="true" type="tns:IdentityInfo"/>
      <xs:element name="Role" type="tns:Role"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="RecipientRoleInfo" nillable="true" type="tns:RecipientRoleInfo"/>
  <xs:element name="SetPermissionsResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="SetPermissionsResult" nillable="true"
type="tns:SetPermissionsOperationResponse"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="SetPermissionsOperationResponse">
    <xs:sequence>
      <xs:element minOccurs="0" name="FailedRecipients" nillable="true"
type="tns:ArrayOfRecipientErrorInfo"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="SetPermissionsOperationResponse" nillable="true"
type="tns:SetPermissionsOperationResponse"/>
  <xs:complexType name="ArrayOfRecipientErrorInfo">
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="unbounded" name="RecipientErrorInfo"
nillable="true" type="tns:RecipientErrorInfo"/>
    </xs:sequence>
  </xs:complexType>
```

```xml
      <xs:element name="ArrayOfRecipientErrorInfo" nillable="true"
type="tns:ArrayOfRecipientErrorInfo"/>
  <xs:complexType name="RecipientErrorInfo">
    <xs:sequence>
      <xs:element name="ErrorDetail" nillable="true" type="xs:string"/>
      <xs:element name="ErrorReason" type="tns:RecipientErrorReason"/>
      <xs:element name="Recipient" nillable="true" type="tns:IdentityInfo"/>
      <xs:element minOccurs="0" name="ServerData" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="RecipientErrorInfo" nillable="true" type="tns:RecipientErrorInfo"/>
  <xs:simpleType name="RecipientErrorReason">
    <xs:restriction base="xs:string">
      <xs:enumeration value="UnsupportedRecipientType"/>
      <xs:enumeration value="InvalidRecipientId"/>
      <xs:enumeration value="RecipientUnknown"/>
      <xs:enumeration value="InternalServerError"/>
      <xs:enumeration value="DailySendMailQuotaExceeded"/>
      <xs:enumeration value="HipChallengeRequired"/>
      <xs:enumeration value="BadNetworkState"/>
      <xs:enumeration value="NotInAddressBook"/>
    </xs:restriction>
  </xs:simpleType>
  <xs:element name="RecipientErrorReason" nillable="true" type="tns:RecipientErrorReason"/>
  <xs:element name="GetLinks">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="getLinksRequest" nillable="true"
type="tns:GetLinksOperationRequest"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="GetLinksOperationRequest">
    <xs:sequence>
      <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
      <xs:element name="Document" nillable="true" type="tns:Document"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="GetLinksOperationRequest" nillable="true"
type="tns:GetLinksOperationRequest"/>
  <xs:element name="GetLinksResponse">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="GetLinksResult" nillable="true"
type="tns:GetLinksOperationResponse"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="GetLinksOperationResponse">
    <xs:sequence>
      <xs:element name="TokenizedEditLink" nillable="true" type="xs:string"/>
      <xs:element name="TokenizedViewLink" nillable="true" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
  <xs:element name="GetLinksOperationResponse" nillable="true"
type="tns:GetLinksOperationResponse"/>
  <xs:element name="SetLinks">
    <xs:complexType>
      <xs:sequence>
        <xs:element minOccurs="0" name="setLinksRequest" nillable="true"
type="tns:SetLinksOperationRequest"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <xs:complexType name="SetLinksOperationRequest">
    <xs:sequence>
      <xs:element name="BaseRequest" nillable="true" type="tns:SharingOperationBaseRequest"/>
      <xs:element name="Document" nillable="true" type="tns:Document"/>
      <xs:element name="TokenizedEditLinkAction" type="tns:SetLinkAction"/>
```

```xml
            <xs:element name="TokenizedViewLinkAction" type="tns:SetLinkAction"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="SetLinksOperationRequest" nillable="true"
type="tns:SetLinksOperationRequest"/>
    <xs:simpleType name="SetLinkAction">
        <xs:restriction base="xs:string">
            <xs:enumeration value="None"/>
            <xs:enumeration value="Generate"/>
            <xs:enumeration value="Clear"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:element name="SetLinkAction" nillable="true" type="tns:SetLinkAction"/>
    <xs:element name="SetLinksResponse">
        <xs:complexType>
            <xs:sequence>
                <xs:element minOccurs="0" name="SetLinksResult" nillable="true"
type="tns:SetLinksOperationResponse"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:complexType name="SetLinksOperationResponse">
        <xs:sequence>
            <xs:element name="TokenizedEditLink" nillable="true" type="xs:string"/>
            <xs:element name="TokenizedEditLinkAction" type="tns:SetLinkAction"/>
            <xs:element name="TokenizedViewLink" nillable="true" type="xs:string"/>
            <xs:element name="TokenizedViewLinkAction" type="tns:SetLinkAction"/>
        </xs:sequence>
    </xs:complexType>
    <xs:element name="SetLinksOperationResponse" nillable="true"
type="tns:SetLinksOperationResponse"/>
    <xs:element name="GetVersions">
        <xs:complexType>
            <xs:sequence/>
        </xs:complexType>
    </xs:element>
    <xs:element name="GetVersionsResponse">
        <xs:complexType>
            <xs:sequence>
                <xs:element xmlns:tns1="http://schemas.microsoft.com/2003/10/Serialization/Arrays"
minOccurs="0" name="GetVersionsResult" nillable="true" type="tns1:ArrayOfstring"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:schema>
```

8   Appendix C: A List of Server Error Codes

The following table contains a list of error codes that a SharePoint server can report.

Error Code	Description
0	The user does not have permissions to access the resource in the server.
1	A base request is not found.
2	The server does not support the custom message.
3	The server could not locate the **document**.
4	The server does not support clearing a **tokenized sharing link** with edit access.
5	The server does not support resetting a tokenized sharing link with edit access.
6	The server does not support feed notification.
7	A document is not specified in the input request.
8	An unknown server error has occurred.
9	The document identifier is not valid.
10	The document identifier type is not valid.
11	The **TokenizedEditLinkAction** is not valid.
12	The market identifier is invalid.
13	The recipient type is invalid.
14	The principal details view is invalid.
15	The recipient list is invalid.
16	The **TokenizedViewLinkAction** is not valid.
17	The method is not supported by the server.
18	Server managed notification is not supported.
19	The service has been disabled by the server.
20	**SendTokenizedLinkInNotifications** is not supported by the server.
21	The user is unknown to the server.
22	The server does not support clearing the view link.
23	The server does not support resetting the view link.
24	The document is not shareable.
25	The request operation is invalid.

9   Appendix D: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include updates to those products.

- Microsoft SharePoint Server 2013

- Microsoft SharePoint Foundation 2013

- Microsoft SharePoint Server 2016

- Microsoft SharePoint Server 2019

- Microsoft SharePoint Server Subscription Edition

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates 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 2.2.4.7: This element is not used by SharePoint Foundation 2013.

<2> Section 3.1.1: Support for **organization access links** is available in SharePoint Server 2019.

10 Change Tracking

This section identifies changes that were made to this document since the last release. Changes are classified as Major, Minor, or None.

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.
- A document revision that captures changes to protocol functionality.

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 **None** means that no new technical changes were introduced. Minor editorial and formatting changes may have been made, but the relevant technical content is identical to the last released version.

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

Section	Description	Revision class
9 Appendix D: Product Behavior	Updated list of supported products.	Major

11 Index