

[MS-DOCSWS]:

SharePoint Document Sharing Web Service Protocol

Intellectual Property Rights Notice for Open Specifications Documentation

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

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

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

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.

Table of Contents

1	Introduction	7
1.1	Glossary	7
1.2	References	8
1.2.1	Normative References	8
1.2.2	Informative References	9
1.3	Overview	9
1.3.1	Roles	9
1.3.1.1	Protocol Server	9
1.3.1.2	Protocol Clients	9
1.3.2	Scenarios	10
1.3.2.1	Document Sharing Role Assignments	10
1.3.2.2	Document Anonymous Access Link Retrieval	11
1.4	Relationship to Other Protocols	12
1.5	Prerequisites/Preconditions	12
1.6	Applicability Statement	13
1.7	Versioning and Capability Negotiation	13
1.8	Vendor-Extensible Fields	13
1.9	Standards Assignments	13
2	Messages	14
2.1	Transport	14
2.2	Common Message Syntax	14
2.2.1	Namespaces	14
2.2.2	Messages	14
2.2.3	Elements	14
2.2.4	Complex Types	15
2.2.4.1	ArrayOfRole	15
2.2.4.2	Document	15
2.2.4.3	IdentityInfo	16
2.2.4.4	PictureInfo	16
2.2.4.5	PrincipalAttributes	16
2.2.4.6	PrincipalInfo	17
2.2.4.7	SharingOperationBaseRequest	17
2.2.4.8	SharingServerError	18
2.2.5	Simple Types	18
2.2.5.1	char	18
2.2.5.2	DocumentIdentifierType	19
2.2.5.3	duration	19
2.2.5.4	guid	19
2.2.5.5	IdentityType	19
2.2.5.6	Role	20
2.2.5.7	PermissionMode	21
2.2.6	Attributes	21
2.2.7	Groups	21
2.2.8	Attribute Groups	21
3	Protocol Details	22
3.1	Protocol Server Details	22
3.1.1	Abstract Data Model	22
3.1.2	Timers	23
3.1.3	Initialization	23
3.1.4	Message Processing Events and Sequencing Rules	23
3.1.4.1	GetHostSharingCapabilities	23
3.1.4.1.1	Messages	24
3.1.4.1.1.1	DocumentSharing_GetHostSharingCapabilities_InputMessage	24

3.1.4.1.1.2	DocumentSharing_GetHostSharingCapabilities_OutputMessage	24
3.1.4.1.2	Elements	24
3.1.4.1.2.1	GetHostSharingCapabilities	25
3.1.4.1.2.2	GetHostSharingCapabilitiesResponse	25
3.1.4.1.3	Complex Types	25
3.1.4.1.3.1	GetHostSharingCapabilitiesOperationRequest	26
3.1.4.1.3.2	GetHostSharingCapabilitiesOperationResponse	26
3.1.4.1.3.3	HostSharingCapabilities	26
3.1.4.1.3.4	ArrayOfDocumentIdentifierType	28
3.1.4.1.3.5	ArrayOfPermissionMode	28
3.1.4.1.4	Simple Types	28
3.1.4.1.5	Attributes	28
3.1.4.1.6	Groups	28
3.1.4.1.7	Attribute Groups	28
3.1.4.2	GetLinks	29
3.1.4.2.1	Messages	29
3.1.4.2.1.1	DocumentSharing_GetLinks_InputMessage	29
3.1.4.2.1.2	DocumentSharing_GetLinks_OutputMessage	30
3.1.4.2.2	Elements	30
3.1.4.2.2.1	GetLinks	30
3.1.4.2.2.2	GetLinksResponse	30
3.1.4.2.3	Complex Types	30
3.1.4.2.3.1	GetLinksOperationRequest	31
3.1.4.2.3.2	GetLinksOperationResponse	31
3.1.4.2.4	Simple Types	31
3.1.4.2.5	Attributes	31
3.1.4.2.6	Groups	31
3.1.4.2.7	Attribute Groups	32
3.1.4.3	GetPermissions	32
3.1.4.3.1	Messages	32
3.1.4.3.1.1	DocumentSharing_GetPermissions_InputMessage	32
3.1.4.3.1.2	DocumentSharing_GetPermissions_OutputMessage	33
3.1.4.3.2	Elements	33
3.1.4.3.2.1	GetPermissions	33
3.1.4.3.2.2	GetPermissionsResponse	33
3.1.4.3.3	Complex Types	34
3.1.4.3.3.1	GetPermissionsOperationRequest	34
3.1.4.3.3.2	GetPermissionsOperationResponse	34
3.1.4.3.3.3	ArrayOfPermissionInfo	35
3.1.4.3.3.4	PermissionInfo	35
3.1.4.3.3.5	ArrayOfFolderPermissionInfo	36
3.1.4.3.3.6	FolderPermissionInfo	36
3.1.4.3.4	Simple Types	36
3.1.4.3.4.1	PrincipalDetailsView	36
3.1.4.3.5	Attributes	37
3.1.4.3.6	Groups	37
3.1.4.3.7	Attribute Groups	37
3.1.4.4	GetUserSharingAttributes	37
3.1.4.4.1	Messages	38
3.1.4.4.1.1	DocumentSharing_GetUserSharingAttributes_InputMessage	38
3.1.4.4.1.2	DocumentSharing_GetUserSharingAttributes_OutputMessage	38
3.1.4.4.2	Elements	38
3.1.4.4.2.1	GetUserSharingAttributes	39
3.1.4.4.2.2	GetUserSharingAttributesResponse	39
3.1.4.4.3	Complex Types	39
3.1.4.4.3.1	GetUserSharingAttributesOperationRequest	40
3.1.4.4.3.2	GetUserSharingAttributesOperationResponse	40
3.1.4.4.3.3	ArrayOfNetworkInfo	41

3.1.4.4.3.4	NetworkInfo	41
3.1.4.4.3.5	ShareDisallowedReasonInfo	41
3.1.4.4.4	Simple Types	42
3.1.4.4.4.1	ShareDisallowedReason	42
3.1.4.4.4.2	ShareServerType	42
3.1.4.4.5	Attributes	43
3.1.4.4.6	Groups.....	43
3.1.4.4.7	Attribute Groups.....	43
3.1.4.5	GetVersions.....	43
3.1.4.5.1	Messages	44
3.1.4.5.1.1	DocumentSharing_GetVersions_InputMessage	44
3.1.4.5.1.2	DocumentSharing_GetVersions_OutputMessage	44
3.1.4.5.2	Elements.....	44
3.1.4.5.2.1	GetVersions	44
3.1.4.5.2.2	GetVersionsResponse	45
3.1.4.5.3	Complex Types	45
3.1.4.5.3.1	ArrayOfstring	45
3.1.4.5.4	Simple Types	45
3.1.4.5.5	Attributes	45
3.1.4.5.6	Groups.....	45
3.1.4.5.7	Attribute Groups.....	46
3.1.4.6	SetLinks	46
3.1.4.6.1	Messages	46
3.1.4.6.1.1	DocumentSharing_SetLinks_InputMessage	47
3.1.4.6.1.2	DocumentSharing_SetLinks_OutputMessage	47
3.1.4.6.2	Elements.....	47
3.1.4.6.2.1	SetLinks	47
3.1.4.6.2.2	SetLinksResponse	47
3.1.4.6.3	Complex Types	48
3.1.4.6.3.1	SetLinksOperationRequest	48
3.1.4.6.3.2	SetLinksOperationResponse	48
3.1.4.6.4	Simple Types	49
3.1.4.6.4.1	SetLinkAction	49
3.1.4.6.5	Attributes	49
3.1.4.6.6	Groups.....	49
3.1.4.6.7	Attribute Groups.....	49
3.1.4.7	SetPermissions	50
3.1.4.7.1	Messages	50
3.1.4.7.1.1	DocumentSharing_SetPermissions_InputMessage	51
3.1.4.7.1.2	DocumentSharing_SetPermissions_OutputMessage	51
3.1.4.7.2	Elements.....	51
3.1.4.7.2.1	SetPermissions	51
3.1.4.7.2.2	SetPermissionsResponse.....	51
3.1.4.7.3	Complex Types	52
3.1.4.7.3.1	SetPermissionsOperationRequest	52
3.1.4.7.3.2	ArrayOfRecipientRoleInfo	53
3.1.4.7.3.3	RecipientRoleInfo	53
3.1.4.7.3.4	SetPermissionsOperationResponse	53
3.1.4.7.3.5	ArrayOfRecipientErrorInfo	54
3.1.4.7.3.6	RecipientErrorInfo	54
3.1.4.7.4	Simple Types	54
3.1.4.7.4.1	RecipientErrorReason	54
3.1.4.7.5	Attributes	55
3.1.4.7.6	Groups.....	55
3.1.4.7.7	Attribute Groups.....	55
3.1.5	Timer Events.....	55
3.1.6	Other Local Events.....	55

4	Protocol Examples	56
4.1	Document Sharing Role Assignment	56
4.1.1	GetVersions	56
4.1.1.1	Request	56
4.1.1.2	Response	56
4.1.2	GetHostSharingCapabilities	56
4.1.2.1	Request	57
4.1.2.2	Response	57
4.1.3	GetUserSharingAttributes	58
4.1.3.1	Request	58
4.1.3.2	Response	58
4.1.4	GetPermissions	59
4.1.4.1	Request	59
4.1.4.2	Response	59
4.1.5	SetPermissions	61
4.1.5.1	Request	61
4.1.5.2	Response	61
4.2	Document Anonymous Access Link Retrieval	62
4.2.1	SetLinks	62
4.2.1.1	Request	62
4.2.1.2	Response	63
4.2.2	GetLinks	63
4.2.2.1	Request	63
4.2.2.2	Response	64
5	Security	65
5.1	Security Considerations for Implementers	65
5.2	Index of Security Parameters	65
6	Appendix A: Full WSDL	66
7	Appendix B: Full XML Schema	70
7.1	http://schemas.microsoft.com/2003/10/Serialization/Arrays Schema	70
7.2	http://schemas.microsoft.com/2003/10/Serialization/ Schema	70
7.3	http://schemas.microsoft.com/clouddocuments Schema	71
8	Appendix C: A List of Server Error Codes	79
9	Appendix D: Product Behavior	80
10	Change Tracking	81
11	Index	82

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 anonymous access links for guest users to access documents without sign-in.

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.

document: An object in a content database such as a file, folder, list (1), 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).

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.

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", May 2000, <http://www.w3.org/TR/2000/NOTE-SOAP-20000508/>

[SOAP1.2/1] Gudgin, M., Hadley, M., Mendelsohn, N., Moreau, J., and Nielsen, H.F., "SOAP Version 1.2 Part 1: Messaging Framework", W3C Recommendation, June 2003, <http://www.w3.org/TR/2003/REC-soap12-part1-20030624>

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

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

1.2.2 Informative References

None.

1.3 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 anonymous access links, and then allow guest users to access the document through the anonymous links without being authenticated by a protocol server.

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 anonymous access 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.

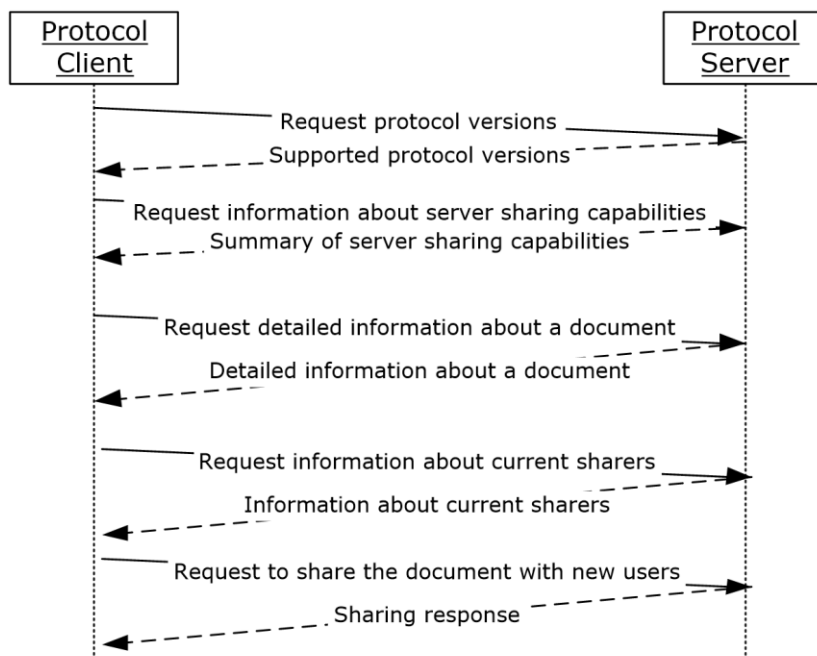


Figure 1: Path of information about document sharing role assignments.

1.3.2.2 Document Anonymous Access Link Retrieval

Protocol clients can find out if a protocol server has enabled anonymous access, and whether anonymous access links are available for a particular document. The client can retrieve existing anonymous links or generate new ones, and then share the links with guest users, who can then access the document through the anonymous access links 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 anonymous access links for a document.
8. The protocol server responds with information about the requested anonymous access links.
9. The protocol client sends a request to the protocol server to generate new anonymous access links or clear the links for a document.
10. The protocol server responds with results about the request to generate or clear anonymous access links.

The following diagram shows the exchange.

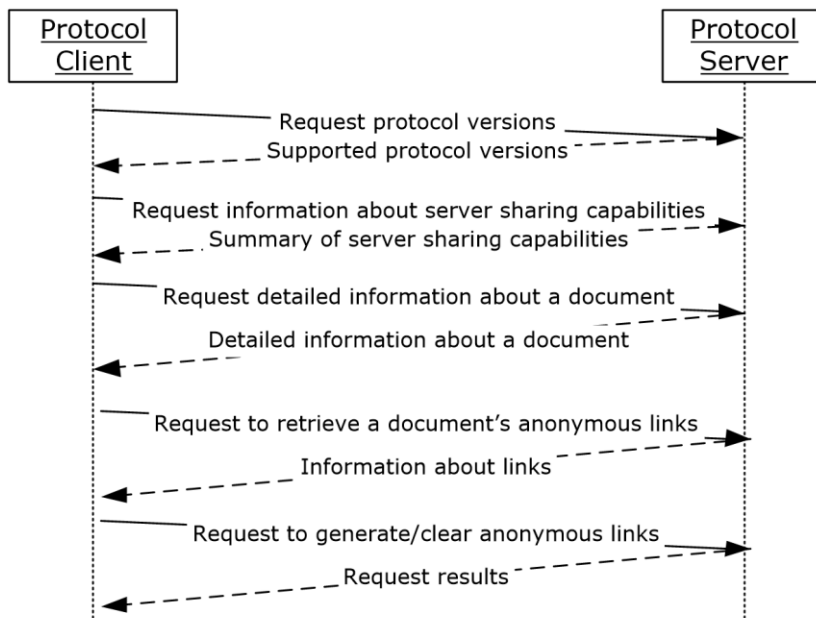


Figure 2: Path of information about document anonymous access link retrieval.

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] and [SOAP1.2/2]. 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:

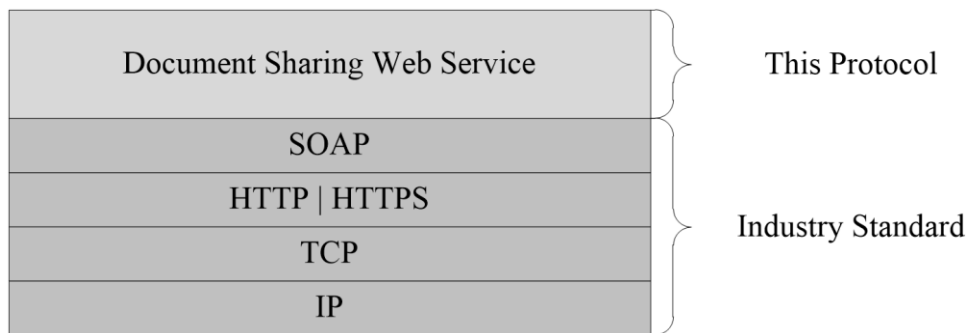


Figure 3: This protocol in relation to other protocols

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 [\[SOAP1.2/1\]](#) 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 [\[SOAP1.2/1\]](#), 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 [\[XMLSCHEMA1\]](#) and [\[XMLSCHEMA2\]](#), 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] [XMLSCHEMA2]

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:string"/>
</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.

```
<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.

```
<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 anonymous access model by providing anonymous access links to objects. These anonymous links allow guest users or authenticated users with no granted

permission to an object to access the object anonymously. The server SHOULD allow a user with appropriate permissions to retrieve, generate or clear anonymous access 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 anonymous 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 anonymous 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

Complex type	Description
	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:sequence>
</xs:complexType>
```

```

    <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 anonymous links as the default instead of regular links in server-distributed sharing notifications. Set to true indicates to include anonymous 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 anonymous edit links.

SupportsResettingTokenizedViewLinks: A Boolean flag indicating whether the server supports resetting anonymous view links.

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 anonymous edit links.

SupportsTokenizedViewLinks: A Boolean flag indicating whether the server supports anonymous view links.

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 anonymous 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/cloud/documents/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/cloud/documents/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/cloud/documents/DocumentSharing/GetLinksSharingServerErrorFault"
    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 anonymous access or the specified document does not provide anonymous links, sends a SOAP fault message with an error code 17 (section 8).
3. Retrieves existing anonymous links for the document and returns a **GetLinksResponse** element in the **DocumentSharing_GetLinks_OutputMessage** response message.
4. The **GetLinksResponse** element SHOULD only contain an anonymous view link if the calling user has only the **View** role on the document.
5. The **GetLinksResponse** element SHOULD contain both an anonymous view link and an anonymous edit link if the calling user has the **Edit** role or is an owner of the document.
6. If none of the anonymous access links exists 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.

```
<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.

```
<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.

```
<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 anonymous edit link for a document, if available.

TokenizedViewLink: The anonymous view link 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/cloud/documents/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/cloud/documents/DocumentSharing/GetPermissionsResponse"
    message="tns:DocumentSharing_GetPermissions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://schemas.microsoft.com/cloud/documents/DocumentSharing/GetPermissionsSharingServerErrorFault"
    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:sequence>
</xs:complexType>
```

```

    <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 anonymous edit link if the link is available and the calling user has permissions to edit the document.

TokenizedViewLink: Set to the document's anonymous view link 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/GetUserSharingAttributes"
    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/GetUserSharingAttributesResponse"
    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/GetUserSharingAttributesSharingServerErrorFault"
    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.

Complex type	Description
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 anonymous edit link for the document.

CanAccessTokenizedViewLink: A Boolean flag indicating whether the calling user can access the anonymous view link 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 anonymous edit link for the document.

CanResetTokenizedViewLink: A Boolean flag indicating whether the calling user can reset the anonymous view link 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.
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"/>
</wsdl:operation>
```

```

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 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 anonymous 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/SetLinksSharingServerErrorFault"
    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 anonymous access, or the specified document provides no anonymous links, the server **MUST** return a SOAP fault with an error code 17 (section 8).
4. Generates or clears corresponding anonymous 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 anonymous edit link for a document.

TokenizedViewLinkAction: Indicates whether to generate or clear the anonymous view link 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 anonymous edit link URL for a document.

TokenizedEditLinkAction: Indicates the action that was taken on the anonymous edit link by the server.

TokenizedViewLink: The anonymous view link URL for a document.

TokenizedViewLinkAction: Indicates the action that was taken on the anonymous view link 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/cloud/documents/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/cloud/documents/DocumentSharing/SetPermissionsResponse"
    message="tns:DocumentSharing_SetPermissions_OutputMessage"
    xmlns:wsaw="http://www.w3.org/2006/05/addressing/wsdl"/>
  <wsdl:fault
    wsaw:Action="http://schemas.microsoft.com/cloud/documents/DocumentSharing/SetPermissionsSharingServerErrorFault"
    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 anonymous 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 anonymous 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	
RecipientUnknown	The recipient is unknown to the server.
InternalServerError	An unknown server error.
DailySendMailQuotaExceeded	Not used.
HipChallengeRequired	Not used.
BadNetworkState	
NotInAddressBook	

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 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>
        </getHostSharingCapabilitiesRequest>
      </GetHostSharingCapabilities>
    </s:Body>
  </s:Envelope>
```

4.1.2.2 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>
    <GetHostSharingCapabilitiesResponse
      xmlns="http://schemas.microsoft.com/clouddocuments">
      <GetHostSharingCapabilitiesResult
        xmlns:i="http://www.w3.org/2001/XMLSchema-instance">
        <HostSharingCapabilities>
          <CustomMessageMaxLength>500</CustomMessageMaxLength>
          <DefaultsToTokenizedLinksInServerNotifications>>false</DefaultsToTokenizedLinksInServerNotifications>
          </DefaultsToTokenizedLinksInServerNotifications>
          <SupportedDocumentIdentifierTypes>
            <DocumentIdentifierType>WebUrl</DocumentIdentifierType>
          </SupportedDocumentIdentifierTypes>
          <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 a UI option to include anonymous 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?guestaccesstoken=6vxRgoErUsXGee52gbmJUPLvYRPic4Xsf3%2bUbH3CJVI%3d&amp;docid=1f11068877bdd47f88ef5d693143fe45c</TokenizedEditLink>

<TokenizedViewLink>http://Contoso/my/personal/RajeshPatel/_layouts/15/guestaccess.aspx?guestaccesstoken=YJ5tDJXL6z2CQI9XT4R5XCM6kmMYayiMxT0msEPJjus%3d&amp;docid=0f11068877bdd47f88ef5d693143fe45c</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/clouddocsdocuments">
      <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>
        <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>ExternalUserEnablingFailed</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 Anonymous Access Link Retrieval

Overall scenario: A protocol client wants to construct appropriate UI to generate or retrieve anonymous access links for a document in a SharePoint server. A client sharing application can combine sharing and anonymous 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 anonymous 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 anonymous edit and view links 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>

```

```

    </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?guestaccesstoken=6vxRgoErUsXGee52gbmJUPLvYRPic4Xsf3%2bUbH3CJVI%3d&docid=1f11068877bdd47f88ef5d693143fe45c</TokenizedEditLink>
          <TokenizedEditLinkAction>Generate</TokenizedEditLinkAction>

        <TokenizedViewLink>http://Contoso/my/personal/RajeshPatel/_layouts/15/guestaccess.aspx?guestaccesstoken=YJ5tDJXL6z2CQI9XT4R5XCM6kmMYayiMxT0msEPJus%3d&docid=0f11068877bdd47f88ef5d693143fe45c</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 anonymous links are returned. If the calling user can only view the document, then only the anonymous view 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:portType>
    </wsdl:binding>
  </wsdl:portType>

```

```

</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: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:restriction>
  </xs:simpleType>
</xs:schema>
```

```

        <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"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>

```



```

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

```

```

        <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>

```

```

    <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>

```

```

<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"/>

```

```

        <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 an anonymous edit link.
5	The server does not support resetting an anonymous edit link.
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 released service packs.

- Microsoft SharePoint Server 2013
- Microsoft SharePoint Foundation 2013
- Microsoft SharePoint Server 2016

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

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

[<1> Section 2.2.4.7](#): This element is not used by SharePoint Foundation 2013.

10 Change Tracking

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

11 Index

A

Abstract data model
 [server](#) 22
[Applicability](#) 13
[ArrayOfRole complex type](#) 15
[Attribute groups](#) 21
[Attributes](#) 21

C

[Capability negotiation](#) 13
[Change tracking](#) 81
[char simple type](#) 18
Client
 [overview](#) 22
[Complex types](#) 15
 [ArrayOfRole](#) 15
 [Document](#) 15
 [IdentityInfo](#) 16
 [PictureInfo](#) 16
 [PrincipalAttributes](#) 16
 [PrincipalInfo](#) 17
 [SharingOperationBaseRequest](#) 17
 [SharingServerError](#) 18

D

Data model - abstract
 [server](#) 22
[Document anonymous access link retrieval example](#)
 62
[Document complex type](#) 15
[Document sharing role assignment example](#) 56
[DocumentIdentifierType simple type](#) 19
[duration simple type](#) 19

E

Events
 [local - server](#) 55
 [timer - server](#) 55
Examples
 [calling the GetHostSharingCapabilities method](#) 56
 [calling the GetLinks method](#) 63
 [calling the GetPermissions method](#) 59
 [calling the GetUserSharingAttributes method](#) 58
 [calling the GetVersions method](#) 56
 [calling the SetLinks method](#) 62
 [calling the SetPermissions method](#) 61
 [document anonymous access link retrieval](#) 62
 [document sharing role assignment](#) 56
 [overview](#) 56

F

[Fields - vendor-extensible](#) 13
[Full WSDL](#) 66
[Full XML schema](#) 70

<http://schemas.microsoft.com/2003/10/Serialization/Schema> 70

<http://schemas.microsoft.com/2003/10/Serialization/Arrays Schema> 70
<http://schemas.microsoft.com/clouddocuments/Schema> 71

G

[Glossary](#) 7
[Groups](#) 21
[guid simple type](#) 19

I

[IdentityInfo complex type](#) 16
[IdentityType simple type](#) 19
[Implementer - security considerations](#) 65
[Index of security parameters](#) 65
[Informative references](#) 9
Initialization
 [server](#) 23
[Introduction](#) 7

L

Local events
 [server](#) 55

M

Message processing
 [server](#) 23
Messages
 [ArrayOfRole complex type](#) 15
 [attribute groups](#) 21
 [attributes](#) 21
 [char simple type](#) 18
 [complex types](#) 15
 [Document complex type](#) 15
 [DocumentIdentifierType simple type](#) 19
 [duration simple type](#) 19
 [elements](#) 14
 [enumerated](#) 14
 [groups](#) 21
 [guid simple type](#) 19
 [IdentityInfo complex type](#) 16
 [IdentityType simple type](#) 19
 [namespaces](#) 14
 [PermissionMode simple type](#) 21
 [PictureInfo complex type](#) 16
 [PrincipalAttributes complex type](#) 16
 [PrincipalInfo complex type](#) 17
 [Role simple type](#) 20
 [SharingOperationBaseRequest complex type](#) 17
 [SharingServerError complex type](#) 18
 [simple types](#) 18
 [syntax](#) 14
 [transport](#) 14

N

[Namespaces](#) 14

[Normative references](#) 8

O

Operations

[GetHostSharingCapabilities](#) 23
[GetLinks](#) 29
[GetPermissions](#) 32
[GetUserSharingAttributes](#) 37
[GetVersions](#) 43
[SetLinks](#) 46
[SetPermissions](#) 50
[Overview \(synopsis\)](#) 9

P

[Parameters - security index](#) 65
[PermissionMode simple type](#) 21
[PictureInfo complex type](#) 16
[Preconditions](#) 12
[Prerequisites](#) 12
[PrincipalAttributes complex type](#) 16
[PrincipalInfo complex type](#) 17
[Product behavior](#) 80
[Protocol clients](#) 9
Protocol Details
[overview](#) 22
[Protocol server](#) 9

R

[References](#) 8
[informative](#) 9
[normative](#) 8
[Relationship to other protocols](#) 12
[Role simple type](#) 20
[Roles](#) 9

S

Scenarios
[overview](#) 10
Security
[implementer considerations](#) 65
[parameter index](#) 65
Sequencing rules
[server](#) 23
Server
[abstract data model](#) 22
[GetHostSharingCapabilities operation](#) 23
[GetLinks operation](#) 29
[GetPermissions operation](#) 32
[GetUserSharingAttributes operation](#) 37
[GetVersions operation](#) 43
[initialization](#) 23
[local events](#) 55
[message processing](#) 23
[overview](#) 22
[sequencing rules](#) 23
[SetLinks operation](#) 46
[SetPermissions operation](#) 50
[timer events](#) 55
[timers](#) 23
[SharingOperationBaseRequest complex type](#) 17
[SharingServerError complex type](#) 18

[Simple types](#) 18

[char](#) 18
[DocumentIdentifierType](#) 19
[duration](#) 19
[guid](#) 19
[IdentityType](#) 19
[PermissionMode](#) 21
[Role](#) 20
[Standards assignments](#) 13
Syntax
[messages - overview](#) 14

T

Timer events
[server](#) 55
Timers
[server](#) 23
[Tracking changes](#) 81
[Transport](#) 14
Types
[complex](#) 15
[simple](#) 18

V

[Vendor-extensible fields](#) 13
[Versioning](#) 13

W

[WSDL](#) 66

X

[XML schema](#) 70

<http://schemas.microsoft.com/2003/10/Serialization/Schema> 70

<http://schemas.microsoft.com/2003/10/Serialization/Arrays Schema> 70

<http://schemas.microsoft.com/clouddocuments/Schema> 71