

## [MS-EMMWS]:

# Microsoft Enterprise Managed Metadata Web Service Protocol

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## Revision Summary

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# 1 Introduction

The Microsoft Enterprise Managed Metadata Web Service Protocol enables a protocol client to interact with a managed metadata store. A typical scenario for using this protocol is tagging a document with managed metadata through a rich client application.

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:

**claim-based authentication mode:** A set of operations that is used to establish trust relationships between claims providers and relying party applications. It involves the exchange of identifying certificates that make it possible for a relying party to trust the content of a claim that is issued by a claims provider.

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

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

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

**internal identifier:** An integer that uniquely identifies any item in a **term store**.

**language code identifier (LCID):** A 32-bit number that identifies the user interface human language dialect or variation that is supported by an application or a client computer.

**service application:** A middle-tier application that runs without any user interface components and supports other applications by performing tasks such as retrieving or modifying data in a database.

**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.



**term:** A concept or an idea that is stored and can be used as metadata.

**term label:** A string that is used as the display value for a term. Each term label is associated with a specific language.

**term set:** A collection of terms that are arranged into and stored as a hierarchy or a flat list.

**term store:** A database in which managed metadata is stored in the form of **term sets** and **terms**.

**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](mailto:dochelp@microsoft.com). We will assist you in finding the relevant information.

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

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

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

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

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

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

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

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

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

## 1.2.2 Informative References

[MS-EMMCOSM] Microsoft Corporation, "[Enterprise Managed Metadata Client-Side Object Model Protocol](#)".

[MS-EMMWCF] Microsoft Corporation, "[Metadata Shared Service WCF Service Protocol](#)".

[MS-SPSTWS] Microsoft Corporation, "[SharePoint Security Token Service Web Service Protocol](#)".

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

## 1.3 Overview

Enterprises wanting to interact with digital assets and resources by way of metadata applied to the items often find that the inability to manage, share, update or restrict metadata values from one or many centralized services in the enterprise results in items that have inconsistent or unreliable metadata.

To achieve consistency in metadata use and behavior, metadata can be organized into **terms** and **term sets** which are managed centrally in **term stores**. Term stores can be located externally to client applications that apply managed metadata to their digital assets and resources. This protocol specifies a web service that allows client applications to retrieve and add terms from remote term stores, thus bringing rich interaction with managed metadata to clients that are external to the term store servers.

For each term store maintained by the protocol server, the protocol server stores the **LCIDs** of the languages supported by the term store and the LCID of the default language for the term store.

Each term store can store one or more term sets. Each term set contains a hierarchy of terms such that each term set contains 0 or more root terms (terms without parents) and each term in the term set can have 1 or more child terms.

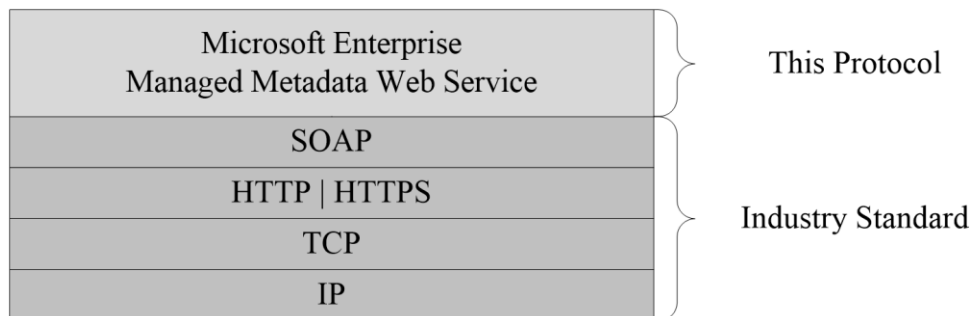
Each term in a term set can have a **term label** for each language supported by its term store.

## 1.4 Relationship to Other Protocols

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

The [\[MS-EMMWS\]](#) protocol provides access to **term stores** from the local server application, this protocol is specifically designed to provide external client applications with access to term stores.

The following diagram shows the underlying messaging and transport stack used by the protocol:



**Figure 1: 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 the protocol client. The protocol server endpoint is formed by appending `"/_vti_bin/taxonomyclientservice.asmx"` to the URL of the site. For example, if the URL of the site were `http://www.contoso.com`, the protocol server endpoint would be `http://www.contoso.com/_vti_bin/taxonomyclientservice.asmx`.

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

## 1.6 Applicability Statement

This protocol is applicable when the protocol client and protocol server are connected via a high-bandwidth, low-latency connection. It is not applicable to low-bandwidth or high-latency connections.

## 1.7 Versioning and Capability Negotiation

**Supported transports:** This protocol uses multiple transports with SOAP as specified in section [2.1](#).

**Protocol versions:** This document specifies the only version of this protocol.

**Security and authentication methods:** This protocol uses **claim-based authentication mode** to verify read and write access to the connected **term store**. Claim-based authentication is described in [\[MS-SPSTWS\]](#).

**Capability negotiation:** None.

## 1.8 Vendor-Extensible Fields

None.

## 1.9 Standards Assignments

None.

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## 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 [\[SOAP1.1\]](#) SOAP Envelope section 4 or in [\[SOAP1.2-1/2007\]](#) SOAP Message Construct section 5. Protocol server faults MUST be returned either using HTTP status codes as specified in [\[RFC2616\]](#) Status Code Definitions section 10 or using **SOAP faults** as specified either in [\[SOAP1.1\]](#) SOAP Fault section 4.4 or in [\[SOAP1.2-1/2007\]](#) SOAP Fault section 5.4.

### 2.2 Common Message Syntax

This section contains common definitions that are used by this protocol. The syntax of the definitions uses **XML schema**, as specified in [\[XMLSCHEMA1/2\]](#) and [\[XMLSCHEMA2/2\]](#), and **WSDL**, as specified in [\[WSDL\]](#).

#### 2.2.1 Namespaces

This specification defines and references various **XML namespaces** using the mechanisms specified in [\[XMLNS\]](#). Although this specification associates a specific **XML namespace prefix** for each XML namespace that is used, the choice of any particular XML namespace prefix is implementation-specific and not significant for interoperability.

Prefix	Namespace URI	Reference
http	<a href="http://schemas.xmlsoap.org/wsd/http/">http://schemas.xmlsoap.org/wsd/http/</a>	
s1	<a href="http://microsoft.com/wsd/types/">http://microsoft.com/wsd/types/</a>	
soap	<a href="http://schemas.xmlsoap.org/wsd/soap/">http://schemas.xmlsoap.org/wsd/soap/</a>	<a href="#">[SOAP1.1]</a>
soap12	<a href="http://schemas.xmlsoap.org/wsd/soap12/">http://schemas.xmlsoap.org/wsd/soap12/</a>	<a href="#">[SOAP1.2-1/2007]</a> <a href="#">[SOAP1.2-2/2007]</a>
tns	<a href="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">http://schemas.microsoft.com/sharepoint/taxonomy/soap/</a>	
wSDL	<a href="http://schemas.xmlsoap.org/wsd/">http://schemas.xmlsoap.org/wsd/</a>	<a href="#">[WSDL]</a>
xs	<a href="http://www.w3.org/2001/XMLSchema">http://www.w3.org/2001/XMLSchema</a>	<a href="#">[XMLSCHEMA1/2]</a> <a href="#">[XMLSCHEMA2/2]</a>

#### 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
<b>AddTermsTermStoreResponseObject</b>	<b>AddTermsTermStoreResponseObject</b> is used to return data that describes a collection of <b>terms</b> .
<b>ClientTimeStampsForGetTermSetsClientService</b>	<b>ClientTimeStampsForGetTermSetsClientService</b> specifies a collection of time stamps used to determine whether or not to send <b>term set</b> data to the client. The time stamps in this collection <b>MUST</b> be in one-to-one correspondence with a collection of term set identifiers specified in the same client request.
<b>ClientVersionsForGetTermSetsClientService</b>	<b>ClientVersionsForGetTermSetsClientService</b> specifies a collection of versions used to determine what server version the term set data on the client was retrieved from. The versions in this collection <b>MUST</b> be in one-to-one correspondence with a collection of term set identifiers specified in the same client request.
<b>GetTermSetsResponseObject</b>	<b>GetTermSetsResponseObject</b> is used to return data for each of the term sets that was requested. For each term set requested an empty node will be returned which means it is up to date, or the entire term set will be returned if it has been updated in any way since the last time it was retrieved.
<b>NewTermCollectionForAddTermsClientService</b>	<b>NewTermCollectionForAddTermsClientService</b> is used to request that new terms be added to the <b>term store</b> .
<b>NewTermForAddTermsClientServiceChild</b>	<b>NewTermForAddTermsClientServiceChild</b> specifies a sub-tree of new terms to be added to a term set.
<b>NewTermForAddTermsClientServiceParent</b>	<b>NewTermForAddTermsClientServiceParent</b> specifies a sub-tree of new terms to be added to a term set and the location within the term set at which the sub-tree is rooted.
<b>SerializedSharedItemForGetTermSets</b>	<b>SerializedSharedItemForGetTermSets</b> is used to fully specify a single term set with all of its terms.
<b>SerializedSharedTerm</b>	<b>SerializedSharedTerm</b> is used to fully specify a single term.
<b>SerializedSharedTermMembership</b>	<b>SerializedSharedTermMembership</b> is used to fully describe a term set to which a term belongs.
<b>SerializedSharedTermSet</b>	<b>SerializedSharedTermSet</b> is used to fully describe a term set.
<b>ServerTermSetTimeStampsForGetTermSetsClient Service</b>	<b>ServerTermSetTimeStampsForGetTermSetsClient Service</b> is used to return the time stamps that a term set has most recently been updated.
<b>SspIdsForGetTermSetsClientService</b>	<b>SspIdsForGetTermSetsClientService</b> is used to specify which term store is used when getting term set data in the <b>GetTermSets</b> web service.

Complex type	Description
<b>TermIdsForGetKeywordsClientService</b>	Specifies a set of term identifiers.
<b>TermIdsForGetTermsByLabelClientService</b>	<b>TermIdsForGetTermsByLabelClientService</b> specifies a collection of term identifiers to be validated for existence in the term store.
<b>TermSetIdsForGetTermSetsClientService</b>	<b>TermSetIdsForGetTermSetsClientService</b> specifies the term sets to be retrieved.

### 2.2.4.1 AddTermsTermStoreResponseObject

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**AddTermsTermStoreResponseObject** is used to return data that describes a collection of **terms**.

```
<xs:complexType name="AddTermsTermStoreResponseObject"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="TermStore">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="1" maxOccurs="unbounded" name="T"
type="SerializedSharedTerm"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**TermStore:** This is the collection of terms that have been returned from the request.

**TermStore.T:** Each term requested in this request is returned as a **SerializedSharedTerm** (section [2.2.4.9](#)).

### 2.2.4.2 ClientTimeStampsForGetTermSetsClientService

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**ClientTimeStampsForGetTermSetsClientService** specifies a collection of time stamps used to determine whether or not to send **term set** data to the client. The time stamps in this collection **MUST** be in one-to-one correspondence with a collection of term set identifiers specified in the same client request.

```
<xs:complexType name="ClientTimeStampsForGetTermSetsClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="dateTimes">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="dateTime" type="xs:long"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**dateTimes:** The collection of time stamps.

**dateTimes.dateTime:** A number representing a count of ticks (100-nanosecond units) since the last time the system hosting the **term store** was started. Any non-null value of this element that cannot be parsed as a count of ticks MUST be treated as 0.

#### 2.2.4.3 ClientVersionsForGetTermSetsClientService

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**ClientVersionsForGetTermSetsClientService** specifies a collection of versions used to determine what server version the **term set** data on the client was retrieved from. The versions in this collection MUST be in one-to-one correspondence with a collection of term set identifiers specified in the same client request.

```
<xs:complexType name="ClientVersionsForGetTermSetsClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="versions">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="version" type="xs:long"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**versions:** The collection of versions.

**versions.version:** A number representing the protocol version of the server that the stored term set was retrieved from. Currently there is only one protocol version which is version 1. If another version of the protocol ships it will increment the version number to 2. If no term set is stored on the client this MUST be 0. Otherwise, it MUST be 1. If this element is NULL or not specified, an empty data node MUST be returned to the client.

#### 2.2.4.4 GetTermSetsResponseObject

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**GetTermSetsResponseObject** is used to return data for each of the **term sets** that was requested. For each term set requested an empty node will be returned which means it is up to date, or the entire term set will be returned if it has been updated in any way since the last time it was retrieved.

```
<xs:complexType name="GetTermSetsResponseObject" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="Container">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="1" maxOccurs="unbounded" name="TermStore"
type="SerializedSharedItemForGetTermSets"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```



**Container:** This is the collection of term sets which were requested. If the client request contained a mismatch in the number of client term set time stamps, versions, and identifiers, then this element MUST NOT be present.

**Container.TermStore:** This either specifies that a term set is up to date or fully describes an entire term set and all its **terms** if it has been updated. See **SerializedSharedItemForGetTermSets** (section [2.2.4.8](#)) for a description of that type.

#### 2.2.4.5 NewTermCollectionForAddTermsClientService

**Namespace:** <http://schemas.microsoft.com/sharepoint/taxonomy/soap/>

**NewTermCollectionForAddTermsClientService** is used to request that new **terms** be added to the **term store**.

```
<xs:complexType name="NewTermCollectionForAddTermsClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="newTerms">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="1" maxOccurs="unbounded" name="newTerm"
type="NewTermForAddTermsClientServiceParent"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**newTerms:** This is the collection of new terms which will be added to the term store.

**newTerms.newTerm:** Each new term that will be added to the term store. See **NewTermForAddTermsClientServiceParent** (section [2.2.4.7](#)) for a description of that type.

#### 2.2.4.6 NewTermForAddTermsClientServiceChild

**Namespace:** <http://schemas.microsoft.com/sharepoint/taxonomy/soap/>

**NewTermForAddTermsClientServiceChild** specifies a sub-tree of new terms to be added to a term set.

```
<xs:complexType name="NewTermForAddTermsClientServiceChild"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="newTerm"
type="NewTermForAddTermsClientServiceChild"/>
  </xs:sequence>
  <xs:attribute name="label" type="xs:string"/>
  <xs:attribute name="clientId" type="xs:int"/>
  <xs:attribute name="parentTermId" type="s1:guid"/>
</xs:complexType>
```

**newTerm:** A branch of the sub-tree. The **term** described by the **label** attribute of the **NewTermForAddTermsClientServiceChild** type is the parent term of this branch. If this node is absent, no new terms will be added to this branch of the **term set**.

**label:** Default label of the new term at the root of this sub-tree. The following characters MUST NOT be used in a term label:

- Opening square bracket ([)
- Semicolon (;)
- Quotation mark (")
- Angle brackets (<>)
- Vertical bar (|)
- Ampersand (&)

The label MUST be a string with minimum length 1 character and maximum length 255 characters after spaces are trimmed.

**clientId:** An identifier for the new term. There MUST be a unique **clientId** value for each new term specified within a single enclosing object of type **NewTermCollectionForAddTermsClientService**. These **clientId** values MUST lie in the range 1 to  $n$ , where  $n$  is the number of new terms being specified by the **NewTermCollectionForAddTermsClientService** object.

**parentTermId:** This value MUST be the empty guid.

#### 2.2.4.7 NewTermForAddTermsClientServiceParent

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**NewTermForAddTermsClientServiceParent** specifies a sub-tree of new **terms** to be added to a **term set** and the location within the term set at which the sub-tree is rooted.

```
<xs:complexType name="NewTermForAddTermsClientServiceParent"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="newTerm"
type="NewTermForAddTermsClientServiceChild"/>
  </xs:sequence>
  <xs:attribute name="label" type="xs:string"/>
  <xs:attribute name="clientId" type="xs:int"/>
  <xs:attribute name="parentTermId" type="s1:guid"/>
</xs:complexType>
```

**newTerm:** A branch of the sub-tree. The term described by the **label** attribute of the **NewTermForAddTermsClientServiceParent** type is the parent term of this branch. If this node is absent, no new terms will be added to this branch of the term set. See **NewTermForAddTermsClientServiceChild** (section [2.2.4.6](#)) for a description of that type.

**label:** Default label of the new term at the root this sub-tree. The label MUST be a string with minimum length 1 character and maximum length 255 characters after spaces are trimmed, and MUST NOT contain the invalid characters specified in the previous section.

**clientId:** An identifier for the new term. There MUST be a unique **clientId** value for each new term specified within a single enclosing object of type **NewTermCollectionForAddTermsClientService**. These **clientId** values MUST lie in the range 1 to  $n$ , where  $n$  is the number of new terms being specified by the **NewTermCollectionForAddTermsClientService** object.

**parentTermId:** The identifier of the term to which this sub-tree will be attached. MUST be either the GUID of an existing term in the **term set** or the empty GUID, if the sub-tree is to be added at the root of the **term set**.

## 2.2.4.8 SerializedSharedItemForGetTermSets

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**SerializedSharedItemForGetTermSets** is used to fully specify a single **term set** with all of its **terms**.

```
<xs:complexType name="SerializedSharedItemForGetTermSets"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:choice minOccurs="0" maxOccurs="unbounded">
      <xs:element minOccurs="1" maxOccurs="1" name="TS" type="SerializedSharedTermSet"/>
      <xs:element minOccurs="1" maxOccurs="unbounded" name="T" type="SerializedSharedTerm"/>
    </xs:choice>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="VI">
      <xs:complexType>
        <xs:attribute name="a9" type="s1:guid" use="required"/>
      </xs:complexType>
    </xs:element>
    <xs:element minOccurs="0" maxOccurs="unbounded" name="II">
      <xs:complexType>
        <xs:attribute name="a9" type="s1:guid" use="required"/>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**TS:** Container node for term set data. See **SerializedSharedTermSet** (section [2.2.4.11](#)) for a description of that type.

**T:** Collection of terms in term set. See **SerializedSharedTerm** (section [2.2.4.9](#)) for a description of that type.

**VI:** Each term that was found in the **term store** and was specifically requested. If no terms were requested or if none of the requested terms were found, this node **MUST** be absent.

**VI.a9:** Identifier of the valid term. See **guid** (section [2.2.5.1](#)) for a description of that type.

**II:** Each term that was not found in the term store but was requested. If no terms were requested, or if all of the requested terms were found, this node **MUST** be absent.

**II.a9:** Identifier of the invalid term. See **guid** (section [2.2.5.1](#)) for a description of that type.

## 2.2.4.9 SerializedSharedTerm

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**SerializedSharedTerm** is used to fully specify a single **term**.

```
<xs:complexType name="SerializedSharedTerm" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="LS">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="1" maxOccurs="unbounded" name="TL">
            <xs:complexType>
              <xs:attribute name="a32" type="xs:string" use="optional"/>
              <xs:attribute name="a31" type="xs:boolean" use="required"/>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

```

<xs:element minOccurs="1" maxOccurs="1" name="DS">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="TD">
        <xs:complexType>
          <xs:attribute name="a11" type="xs:string" use="required"/>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element minOccurs="1" maxOccurs="1" name="TMS"
type="SerializedSharedTermMembership"/>
<xs:element minOccurs="0" maxOccurs="1" name="MIS">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="unbounded" name="MI">
        <xs:complexType>
          <xs:attribute name="a9" type="s1:guid" use="required"/>
        </xs:complexType>
      </xs:element>
    </xs:sequence>
  </xs:complexType>
</xs:element>
</xs:sequence>
<xs:attribute name="a9" type="s1:guid" use="required"/>
<xs:attribute name="a21" type="xs:boolean" use="required"/>
<xs:attribute name="a61" type="xs:int" use="required"/>
<xs:attribute name="a72" type="xs:int" use="optional"/>
<xs:attribute name="a1000" type="xs:string" use="optional"/>
</xs:complexType>

```

**LS:** This is the collection of **term labels** that this term contains.

**LS.TL:** This fully describes a single term label.

**LS.TL.a32:** Term label value. The label **MUST** be a string with minimum length 1 character and maximum length 255 characters after spaces are trimmed.

**LS.TL.a31:** **MUST** be true if the term label is the default term label, otherwise false. Only one term label **MUST** be the default term label for each language.

**DS:** Container node for description.

**DS.TD:** term description node. If the term does not contain a description in the requested language or the **term store** default language, this node **MUST NOT** be present.

**DS.TD.a11:** Description value. The description **MUST** be a string with minimum length 0 characters and maximum length 1000 characters.

**TMS:** **term set** node for the term set that the term belongs to. See **SerializedSharedTermMembership** (section [2.2.4.10](#)) for a description of that type.

**MIS:** This is the collection of terms that have been merged with this term. If no terms have been merged with this term, this node **MUST NOT** be present.

**MIS.MI:** This node fully describes a merged term.

**MIS.MI.a9:** Identifier for merged term. See **guid** (section [2.2.5.1](#)) for a description of that type.

**a9:** Identifier of term. See **guid** (section [2.2.5.1](#)) for a description of that type.

**a21:** **MUST** be **false** if the term is not deprecated.

**a61: Internal identifier** for term.

**a72:** Absolute sort order of the term in regards to all other terms in term set.

**a1000:** Comma-separated list of **WssIds** (as described in [\[MS-EMMCOSM\]](#) section 3.1.5.13.1.1.3) that MAY be returned by the **GetChildTermsInTerm** and **GetChildTermsInTermSet**. It MUST NOT be present on the response for the **AddTerms** operation.

#### 2.2.4.10 SerializedSharedTermMembership

**Namespace:** <http://schemas.microsoft.com/sharepoint/taxonomy/soap/>

**SerializedSharedTermMembership** is used to fully describe a **term set** to which a **term** belongs.

```
<xs:complexType name="SerializedSharedTermMembership"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element name="TM">
      <xs:complexType>
        <xs:attribute name="a24" type="s1:guid" use="required"/>
        <xs:attribute name="a12" type="xs:string" use="required"/>
        <xs:attribute name="a15" type="xs:int" use="optional"/>
        <xs:attribute name="a25" type="s1:guid" use="optional"/>
        <xs:attribute name="a40" type="xs:string" use="required"/>
        <xs:attribute name="a17" type="xs:boolean" use="required"/>
        <xs:attribute name="a67" type="xs:string" use="optional"/>
        <xs:attribute name="a45" type="xs:string" use="optional"/>
        <xs:attribute fixed="true" name="a69" type="xs:boolean" use="optional"/>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**TM:** This node fully describes a term set to which a term belongs.

**TM.a24:** Identifier of term set.

**TM.a12:** Term set name in the language requested by the client. If the term set does not have a name in the client's language, the name in the **term store** default language is returned. The name MUST be a string with minimum length 1 character and maximum length 255 characters after spaces are trimmed.

**TM.a15:** The type of the term set. This MUST be 0.

**TM.a25:** Identifier of term that this term set information is pertaining to.

**TM.a40:** Term label path of term with **term labels**. This path starts from the root term and goes until the parent of the term. Consequently this attribute is an empty string for root terms. The maximum length of each term label is 255 characters.

**TM.a17:** MUST be true if term set is available for tagging or false otherwise. A term set is available for tagging if the terms it contains are used to tag list items or documents.

**TM.a67:** A string value that indicates a custom sort order for the child terms of the term identified by **TM.a25**. If the term has no child terms, or if the default sort order is to be applied, the value of this attribute MUST be an empty string. In that case when the child terms are requested, they MUST be sorted alphabetically by their default label. If a custom sort order has been specified for the child terms, the value of this node MUST be a string of the form "identifier<sub>1</sub>:identifier<sub>2</sub>:..." where identifier<sub>n</sub> is a valid child term identifier. The custom sort order then corresponds to the order of these identifiers.

**TM.a45:** Term label path of term with identifiers. This path starts from the root term and goes until the term itself. Consequently this property **MUST NOT** be an empty string.

**TM.a69:** **MUST** be **true** if term identified by **a25** has child terms.

#### 2.2.4.11 SerializedSharedTermSet

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**SerializedSharedTermSet** is used to fully describe a **term set**.

```
<xs:complexType name="SerializedSharedTermSet" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:attribute name="a9" type="s1:guid" use="required"/>
  <xs:attribute name="a17" type="xs:boolean" use="required"/>
  <xs:attribute name="a11" type="xs:string" use="required"/>
  <xs:attribute name="a16" type="xs:boolean" use="required"/>
  <xs:attribute name="a12" type="xs:string" use="required"/>
  <xs:attribute name="a68" type="xs:string" use="required"/>
</xs:complexType>
```

**a9:** Identifier of term set.

**a17:** **MUST** be **true** if term set is available for tagging, or **false** otherwise.

**a11:** Term set description. The maximum length of this string is 1000 characters; it can be an empty string.

**a16:** **MUST** be **true** if the term set is open, or **false** otherwise. A term set is open if users without explicit rights to the term set are allowed to add terms to it.

**a12:** Term set name in the language requested by client. If the term set does not have a name in the client's language, the name in the **term store** default language is returned. The name **MUST** be a string with minimum length 1 character and maximum length 255 characters after spaces are trimmed.

**a68:** Term set contact. The contact is the user or group that is contacted if a user wants to request the addition of a **term** to the term set, and the term set is not open. The contact **MUST** be a string with a maximum length of 320 characters; it can be an empty string.

#### 2.2.4.12 ServerTermSetTimeStampsForGetTermSetsClientService

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**ServerTermSetTimeStampsForGetTermSetsClientService** is used to return the time stamps that a term set has most recently been updated.

```
<xs:complexType name="ServerTermSetTimeStampsForGetTermSetsClientService"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="Container">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="1" maxOccurs="unbounded" name="Node">
            <xs:complexType>
              <xs:attribute name="Time" type="xs:long" use="required"/>
              <xs:attribute name="TermId" type="s1:guid" use="required"/>
            </xs:complexType>
          </xs:element>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

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

**Container:** This is the collection of time stamps which represent the time that the requested **term sets** were updated at.

**Container.Node:** Time stamp for a term set.

**Container.Node.Time:** MUST be time of last update in ticks, or empty if passed in time was current.

**Container.Node.TermId:** Identifier of the term set.

#### 2.2.4.13 SspIdsForGetTermSetsClientService

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**SspIdsForGetTermSetsClientService** is used to specify which **term store** is used when getting **term set** data in the **GetTermSets** web service.

```
<xs:complexType name="SspIdsForGetTermSetsClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="sspIds">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="sspId" type="s1:guid"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**sspIds:** This is the collection of term store identifiers that specify which term store each term set is retrieved from.

**sspIds.sspId:** Identifier of the term store. If this node is absent, no data will be retrieved for this web service request.

#### 2.2.4.14 TermIdsForGetKeywordsClientService

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

Specifies a set of **term** identifiers.

```
<xs:complexType name="TermIdsForGetKeywordsClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="unbounded" name="termId" type="s1:guid"/>
  </xs:sequence>
</xs:complexType>
```

**termId:** The identifier of a term.

#### 2.2.4.15 TermIdsForGetTermsByLabelClientService

**Namespace:** http://schemas.microsoft.com/sharepoint/taxonomy/soap/

**TermIdsForGetTermsByLabelClientService** specifies a collection of **term** identifiers to be validated for existence in the **term store**.

```
<xs:complexType name="TermIdsForGetTermsByLabelClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="termIds">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="termId" type="s1:guid"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**termIds:** The collection of terms to be validated.

**termIds.termId:** The identifier of a single term to be validated. If this node is absent, no term identifiers will be validated for existence in the term store.

#### 2.2.4.16 TermSetIdsForGetTermSetsClientService

**Namespace:** <http://schemas.microsoft.com/sharepoint/taxonomy/soap/>

**TermSetIdsForGetTermSetsClientService** specifies the **term sets** to be retrieved.

```
<xs:complexType name="TermSetIdsForGetTermSetsClientService"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:sequence>
    <xs:element minOccurs="1" maxOccurs="1" name="termSetIds">
      <xs:complexType>
        <xs:sequence>
          <xs:element minOccurs="0" maxOccurs="unbounded" name="termSetId" type="s1:guid"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
  </xs:sequence>
</xs:complexType>
```

**termSetIds:** The collection of term set identifiers which will be used to retrieve term set data.

**termSetIds.termSetId:** The identifier of a term set. If this node is absent, no term sets will be retrieved.

### 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
guid	A GUID that is defined as follows.



### 2.2.5.1 guid

**Namespace:** http://microsoft.com/wsdl/types/

A GUID that is defined as follows.

```
<xs:simpleType name="guid" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:pattern value="[0-9a-fA-F]{8}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{4}-[0-9a-fA-F]{12}"/>
  </xs:restriction>
</xs:simpleType>
```

### 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.

### 2.2.9 Common Data Structures

This specification does not define any common **XML schema** data structures.

## 3 Protocol Details

The client side of this protocol is simply a pass-through. That is, no additional timers or other state is required on the 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.

### 3.1 Server Details

#### 3.1.1 Abstract Data Model

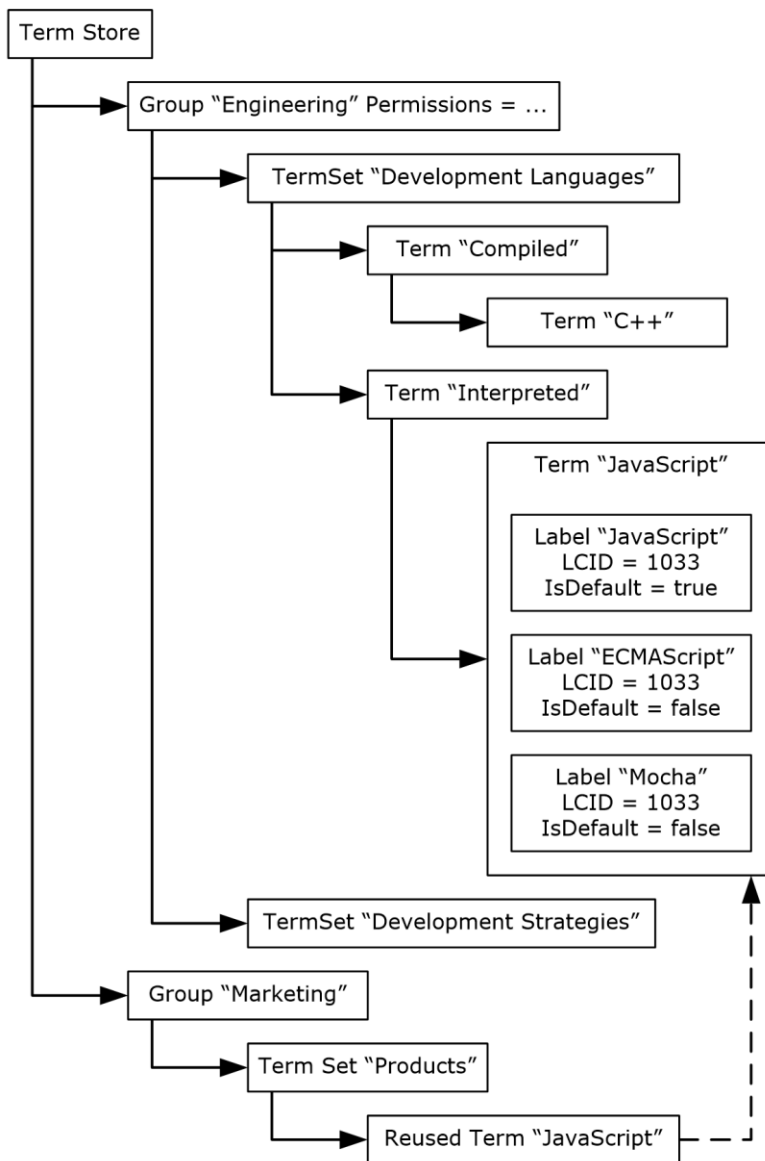
This section describes a conceptual model of possible data organization that an implementation maintains to participate in this protocol. The described organization is provided to facilitate the explanation of how the protocol behaves. This document does not mandate that implementations adhere to this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

The protocol server is used to access **term stores** in multiple **service applications**.

Each term store maintains **term sets** and **terms**. Term sets contain a hierarchy of terms (potentially re-using individual terms in multiple term sets)—that is, the term set has root terms (terms without parents), and each term has 0 or more child terms.

Each term set and each term has values for one or more of the languages. For example, a term has a **term label** for each language.

The following diagram shows these relationships graphically.



**Figure 2: Abstract data model**

### 3.1.2 Timers

None.

### 3.1.3 Initialization

A connection to the term store through the protocols specified in section [1.4](#) MUST be established before using this protocol.

### 3.1.4 Message Processing Events and Sequencing Rules

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

Operation	Description
<b>AddTerms</b>	This operation adds new <b>terms</b> to a <b>term set</b> and specifies the hierarchical relations of the new terms to each other and to existing terms. This operation is defined as follows.
<b>GetChildTermsInTerm</b>	This operation retrieves the immediate child terms for a specific term and is defined as follows.
<b>GetChildTermsInTermSet</b>	This operation retrieves the immediate child terms for a specific term set and is defined as follows.
<b>GetKeywordTermsByGuids</b>	This operation allows the protocol client to retrieve full data on a specified set of terms from the protocol server. The operation is defined as follows.
<b>GetTermsByLabel</b>	This operation searches for terms in the <b>term store</b> by their <b>term label</b> . It will add unfound terms to the default keywords term store if the protocol client requests this behavior. This operation is defined as follows.
<b>GetTermSets</b>	This operation retrieves term sets from the term store and is defined as follows.

### 3.1.4.1 AddTerms

This operation adds new **terms** to a **term set** and specifies the hierarchical relations of the new terms to each other and to existing terms. This operation is defined as follows.

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

```
<wsdl:operation name="AddTerms" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input message="tns:AddTermsSoapIn"/>
  <wsdl:output message="tns:AddTermsSoapOut"/>
</wsdl:operation>
```

#### 3.1.4.1.1 Messages

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

Message	Description
<b>AddTermsSoapIn</b>	The request WSDL message for the <b>AddTerms WSDL operation</b> .
<b>AddTermsSoapOut</b>	The response WSDL message for the <b>AddTerms WSDL operation</b> .

##### 3.1.4.1.1.1 AddTermsSoapIn

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

The **SOAP action** value is:

```
http://schemas.microsoft.com/sharepoint/taxonomy/soap/AddTerms
```

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

#### 3.1.4.1.1.2 AddTermsSoapOut

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

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

#### 3.1.4.1.2 Elements

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

Element	Description
<b>AddTerms</b>	The input data for the <b>AddTerms WSDL operation</b> .
<b>AddTermsResponse</b>	The result data for the <b>AddTerms WSDL operation</b> .

##### 3.1.4.1.2.1 AddTerms

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

```
<xs:element name="AddTerms" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="sharedServiceId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
      <xs:element minOccurs="1" maxOccurs="1" name="termSetId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
      <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="newTerms" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**sharedServiceId:** The identifier of the **term store** to which the new **terms** will be added. If the empty GUID is specified, the terms **MUST** be added to the default keywords term store. [<1>](#)

**termSetId:** The identifier of the **term set** to which the new terms will be added. If the empty GUID is specified, the terms **MUST** be added to the keywords term set. [<2>](#)

**lcid:** The language in which the **term labels** will be saved, if the language exists in the term store. If it does not exist the term store default language **MUST** be used.

**newTerms:** Specifies the new terms to be added, which is an XML encoded **string** that **MUST** conform to the schema of the **NewTermCollectionForAddTermsClientService** complex type (section [2.2.4.5](#)). No new terms will be added if this node is absent. The protocol client **MUST** assign a unique **clientId** value to each new term specified by the

**NewTermForAddTermsClientServiceParent** (section [2.2.4.7](#)) and **NewTermForAddTermsClientServiceChild** elements (section [2.2.4.6](#)) within a single enclosing object of type **NewTermCollectionForAddTermsClientService**. These **clientId** values **MUST** lie in the range 1 to  $n$ , where  $n$  is the number of new terms being specified by the **NewTermCollectionForAddTermsClientService** object.

##### 3.1.4.1.2.2 AddTermsResponse

The **AddTermsResponse** element specifies the result data for the **AddTerms WSDL operation**.

```
<xs:element name="AddTermsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="AddTermsResult" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**AddTermsResult:** The specification of the **terms** that were added based on the request, which is an XML encoded **string** that MUST conform to the schema of the **AddTermsTermStoreResponseObject** complex type (section [2.2.4.1](#)). Identifiers are assigned to the terms when they are created in the **term store**. The specification of the terms is retrieved after the terms are added to the term store.

### 3.1.4.1.3 Complex Types

None.

### 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 GetChildTermsInTerm

This operation retrieves the immediate child terms for a specific term and is defined as follows.

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

```
<wsdl:operation name="GetChildTermsInTerm" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input message="tns:GetChildTermsInTermSoapIn"/>
  <wsdl:output message="tns:GetChildTermsInTermSoapOut"/>
</wsdl:operation>
```

### 3.1.4.2.1 Messages

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

Message	Description
GetChildTermsInTermSoapIn	The request WSDL message for the <b>GetChildTermsInTerm WSDL operation</b> .

Message	Description
<b>GetChildTermsInTermSoapOut</b>	The response WSDL message for the <b>GetChildTermsInTerm</b> WSDL operation.

### 3.1.4.2.1.1 GetChildTermsInTermSoapIn

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

The **SOAP action** value is:

```
http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetChildTermsInTerm
```

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

### 3.1.4.2.1.2 GetChildTermsInTermSoapOut

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

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

### 3.1.4.2.2 Elements

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

Element	Description
<b>GetChildTermsInTerm</b>	The input data for the <b>GetChildTermsInTerm</b> <b>WSDL operation</b> .
<b>GetChildTermsInTermResponse</b>	The result data for the <b>GetChildTermsInTerm</b> WSDL operation.

#### 3.1.4.2.2.1 GetChildTermsInTerm

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

```
<xs:element name="GetChildTermsInTerm" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="sspId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
      <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="termId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
      <xs:element minOccurs="1" maxOccurs="1" name="termSetId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**sspId**: Identifier for the **term store**.[<3>](#)

**lcid:** The **LCID** of the requested language. If the requested language is not available in the term store, the default term store language is used.

**termId:** The **term** identifier of the term whose child terms are to be retrieved. <4>

**termSetId:** The **term set** identifier of the term set from which to retrieve the terms. <5>

### 3.1.4.2.2 GetChildTermsInTermResponse

The **GetChildTermsInTermResponse** element specifies the result data for the **GetChildTermsInTerm WSDL operation**.

```
<xs:element name="GetChildTermsInTermResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetChildTermsInTermResult"
type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetChildTermsInTermResult:** The **terms** that are child terms of the requested term, which is an XML encoded **string** that MUST conform to the schema of the **AddTermsTermStoreResponseObject** complex type (section [2.2.4.1](#)).

### 3.1.4.2.3 Complex Types

None.

### 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 GetChildTermsInTermSet

This operation retrieves the immediate child terms for a specific term set and is defined as follows.

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

```
<wsdl:operation name="GetChildTermsInTermSet" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input message="tns:GetChildTermsInTermSetSoapIn"/>
  <wsdl:output message="tns:GetChildTermsInTermSetSoapOut"/>
</wsdl:operation>
```



### 3.1.4.3.1 Messages

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

Message	Description
<b>GetChildTermsInTermSetSoapIn</b>	The request WSDL message for the <b>GetChildTermsInTermSet WSDL operation</b> .
<b>GetChildTermsInTermSetSoapOut</b>	The response WSDL message for the <b>GetChildTermsInTermSet WSDL operation</b> .

#### 3.1.4.3.1.1 GetChildTermsInTermSetSoapIn

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

The **SOAP action** value is:

```
http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetChildTermsInTermSet
```

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

#### 3.1.4.3.1.2 GetChildTermsInTermSetSoapOut

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

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

### 3.1.4.3.2 Elements

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

Element	Description
<b>GetChildTermsInTermSet</b>	The input data for the <b>GetChildTermsInTermSet WSDL operation</b> .
<b>GetChildTermsInTermSetResponse</b>	The result data for the <b>GetChildTermsInTermSet WSDL operation</b> .

#### 3.1.4.3.2.1 GetChildTermsInTermSet

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

```
<xs:element name="GetChildTermsInTermSet" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="sspId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
      <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="termSetId"
        xmlns:s1="http://microsoft.com/wsdl/types/" type="s1:guid"/>
    </xs:sequence>
  </xs:complexType>
```

</xs:element>

**sspId:** Identifier for the **term store**.[<6>](#)

**lcid:** The **LCID** of the requested language. If the requested language is not available in the term store, the default term store language is used.

**termSetId:** The **term set** identifier of the term set from which to retrieve the terms.[<7>](#)

### 3.1.4.3.2 GetChildTermsInTermSetResponse

The **GetChildTermsInTermSetResponse** element specifies the result data for the **GetChildTermsInTermSet WSDL operation**.

```
<xs:element name="GetChildTermsInTermSetResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetChildTermsInTermSetResult"
        type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetChildTermsInTermSetResult:** The **terms** that are child terms of the requested **term set**, which is an XML encoded **string** that MUST conform to the schema of the **AddTermsTermStoreResponseObject** complex type (section [2.2.4.1](#)).

### 3.1.4.3.3 Complex Types

None.

### 3.1.4.3.4 Simple Types

None.

### 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 GetKeywordTermsByGuids

This operation allows the protocol client to retrieve full data on a specified set of terms from the protocol server. The operation is defined as follows.

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

```

<wsdl:operation name="GetKeywordTermsByGuids" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input message="tns:GetKeywordTermsByGuidsSoapIn"/>
  <wsdl:output message="tns:GetKeywordTermsByGuidsSoapOut"/>
</wsdl:operation>

```

This operation accepts a set of **term** identifiers and returns the term data for each requested term that exists in the **term store** and that is available for tagging and is not deprecated.

### 3.1.4.4.1 Messages

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

Message	Description
<b>GetKeywordTermsByGuidsSoapIn</b>	The request WSDL message for the <b>GetKeywordTermsByGuids WSDL operation</b> .
<b>GetKeywordTermsByGuidsSoapOut</b>	The response WSDL message for the <b>GetKeywordTermsByGuids WSDL operation</b> .

#### 3.1.4.4.1.1 GetKeywordTermsByGuidsSoapIn

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

The **SOAP action** value is:

```
http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetKeywordTermsByGuids
```

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

#### 3.1.4.4.1.2 GetKeywordTermsByGuidsSoapOut

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

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

### 3.1.4.4.2 Elements

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

Element	Description
<b>GetKeywordTermsByGuids</b>	The input data for the <b>GetKeywordTermsByGuids WSDL operation</b> .
<b>GetKeywordTermsByGuidsResponse</b>	The result data for the <b>GetKeywordTermsByGuids WSDL operation</b> .

#### 3.1.4.4.2.1 GetKeywordTermsByGuids

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

```

<xs:element name="GetKeywordTermsByGuids" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="termIds" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

**termIds:** Specifies the identifiers of the requested **terms**. This field **MUST** be formatted as an XML encoded **string** that conforms to the **TermIdsForGetKeywordsClientService** complex type (section [2.2.4.14](#)) schema. The terms are retrieved from all the **term stores** accessible to the protocol server. If all the term stores are online, any requested terms that cannot be found will not be included in the response. If none of the terms can be found, the response will contain no identifiers. However if any of the term stores are offline, and any of the requested terms cannot be found in the remaining term stores, the protocol server **MUST** return a SOAP fault message stating that a term store operation exception occurred.

**lcid:** The requested term label language. If this language does not exist in the term store, the protocol server **MUST** return **term labels** using the default term store language.

### 3.1.4.4.2 GetKeywordTermsByGuidsResponse

The **GetKeywordTermsByGuidsResponse** element specifies the result data for the **GetKeywordTermsByGuids WSDL operation**.

```

<xs:element name="GetKeywordTermsByGuidsResponse"
  xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetKeywordTermsByGuidsResult"
        type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>

```

**GetKeywordTermsByGuidsResult:** This is the serialized **term** data of the terms which were requested, which is an XML encoded **string** that **MUST** conform to the schema of the **AddTermsTermStoreResponseObject** complex type (section [2.2.4.1](#)).

### 3.1.4.4.3 Complex Types

None.

### 3.1.4.4.4 Simple Types

None.

### 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 GetTermsByLabel

This operation searches for **terms** in the **term store** by their **term label**. It will add unfound terms to the default keywords term store if the protocol client requests this behavior. This operation is defined as follows.

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

```
<wsdl:operation name="GetTermsByLabel" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input message="tns:GetTermsByLabelSoapIn"/>
  <wsdl:output message="tns:GetTermsByLabelSoapOut"/>
</wsdl:operation>
```

#### 3.1.4.5.1 Messages

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

Message	Description
<b>GetTermsByLabelSoapIn</b>	The request WSDL message for the <b>GetTermsByLabel WSDL operation</b> .
<b>GetTermsByLabelSoapOut</b>	The response WSDL message for the <b>GetTermsByLabel WSDL operation</b> .

##### 3.1.4.5.1.1 GetTermsByLabelSoapIn

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

The **SOAP action** value is:

```
http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetTermsByLabel
```

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

##### 3.1.4.5.1.2 GetTermsByLabelSoapOut

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

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

#### 3.1.4.5.2 Elements

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

Element	Description
<b>GetTermsByLabel</b>	The input data for the <b>GetTermsByLabel WSDL operation</b> .
<b>GetTermsByLabelResponse</b>	The result data for the <b>GetTermsByLabel WSDL operation</b> .

### 3.1.4.5.2.1 GetTermsByLabel

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

```
<xs:element name="GetTermsByLabel" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="label" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
      <xs:element minOccurs="1" maxOccurs="1" name="matchOption"
type="tns:StringMatchOption"/>
      <xs:element minOccurs="1" maxOccurs="1" name="resultCollectionSize" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="termIds" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="addIfNotFound" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**label:** The set of **term labels** to be searched for. Each individual label within this string MUST be separated from the preceding label (if any) by a semicolon (;). The following characters MUST NOT be used in a term label:

- Opening square bracket ([)
- Semicolon (;)
- Quotation mark (")
- Angle brackets (<>)
- Vertical line (|)
- Ampersand (&)

The label MUST be a string with minimum length 1 character and maximum length 255 characters after spaces are trimmed.

**lcid:** The **LCID** of the term label language to which the search MUST be restricted. If the requested language is not available in the **term store**, the default term store language is used.

**matchOption:** The type of search to be performed. See **StringMatchOption** (section [3.1.4.5.4.1](#)) for a description of that type.

**resultCollectionSize:** The number of **terms** to be returned.

**termIds:** Term identifiers to be validated for existence, which is an XML encoded **string** that MUST conform to the schema of the **TermIdsForGetTermsByLabelClientService** complex type (section [2.2.4.15](#)). If this node is absent, no term identifiers will be validated for existence.

**addIfNotFound:** If **true**, the protocol server MUST add unfound terms to the default keywords term store and MUST place these terms in the keywords **term set**. In this situation, the **lcid** parameter specifies the language of the new terms. [<8>](#) If **addIfNotFound** is **false**, the protocol server MUST NOT add unfound terms to the default keywords term store.

### 3.1.4.5.2.2 GetTermsByLabelResponse

The **GetTermsByLabelResponse** element specifies the result data for the **GetTermsByLabel WSDL operation**.

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

```

<xs:complexType>
  <xs:sequence>
    <xs:element minOccurs="0" maxOccurs="1" name="GetTermsByLabelResult" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
</xs:element>

```

**GetTermsByLabelResult:** Serialized data for each **term** found that matches request, which is an XML encoded **string** that MUST conform to the schema of the **SerializedSharedTerm** complex type (section [2.2.4.9](#)).

### 3.1.4.5.3 Complex Types

None.

### 3.1.4.5.4 Simple Types

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

Simple type	Description
<b>StringMatchOption</b>	Specifies the string-matching options (see section <a href="#">3.1.4.5.4.1</a> ) for <b>term</b> searches. Matches MUST be case-insensitive.

#### 3.1.4.5.4.1 StringMatchOption

**Namespace:** <http://schemas.microsoft.com/sharepoint/taxonomy/soap/>

Matching options for **term** search, defined as follows. Matches MUST be case-insensitive.

```

<xs:simpleType name="StringMatchOption" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:restriction base="xs:string">
    <xs:enumeration value="StartsWith"/>
    <xs:enumeration value="ExactMatch"/>
  </xs:restriction>
</xs:simpleType>

```

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

Value	Meaning
StartsWith	A <b>term label</b> begins with a given string.
ExactMatch	A term label exactly matches a given string.

### 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 GetTermSets

This operation retrieves term sets from the term store and is defined as follows.

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

```
<wsdl:operation name="GetTermSets" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:input message="tns:GetTermSetsSoapIn"/>
  <wsdl:output message="tns:GetTermSetsSoapOut"/>
</wsdl:operation>
```

The parameters to this operation include the identifiers of the requested **term sets** and a time stamp for each. If a requested term set has been updated since the specified time stamp, the protocol server **MUST** return the entire term set. Otherwise, the protocol server **MUST** return an empty node. [<9>](#)

#### 3.1.4.6.1 Messages

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

Message	Description
<b>GetTermSetsSoapIn</b>	The request WSDL message for the <b>GetTermSets WSDL operation</b> .
<b>GetTermSetsSoapOut</b>	The response WSDL message for the <b>GetTermSets WSDL operation</b> .

##### 3.1.4.6.1.1 GetTermSetsSoapIn

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

The **SOAP action** value is:

```
http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetTermSets
```

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

##### 3.1.4.6.1.2 GetTermSetsSoapOut

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

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

#### 3.1.4.6.2 Elements

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

Element	Description
<b>GetTermSets</b>	The input data for the <b>GetTermSets WSDL operation</b> .



Element	Description
<b>GetTermSetsResponse</b>	The result data for the <b>GetTermSets</b> WSDL operation.

### 3.1.4.6.2.1 GetTermSets

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

```
<xs:element name="GetTermSets" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="sharedServiceIds" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="termSetIds" type="xs:string"/>
      <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
      <xs:element minOccurs="0" maxOccurs="1" name="clientTimeStamps" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="clientVersions" type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**sharedServiceIds:** The identifiers of the **term stores** in which the requested **term sets** reside. The number of **sharedServiceIds** child nodes MUST equal the number of **termSetIds** child nodes and the two sets of child nodes MUST be in one-to-one correspondence so that each **sharedServiceIds** child represents the term store identifier of the corresponding term set in the **termSetIds**, which is an XML encoded string that MUST conform to the schema of the **SspIdsForGetTermSetsClientService** complex type (section [2.2.4.13](#)). An empty string with no term set information MUST be returned if this node is absent.

**termSetIds:** The term set identifiers of the term sets to be retrieved, which is an XML encoded **string** that MUST conform to the schema of the **TermSetIdsForGetTermSetsClientService** complex type (section [2.2.4.16](#)). An empty string with no term set information MUST be returned if this node is absent.

**lcid:** The **LCID** of the requested language.

**clientTimeStamps:** The time in ticks used to determine whether or not to return the term set data. This is an XML encoded **string** that MUST conform to the schema of the **ClientTimeStampsForGetTermSetsClientService** complex type (section [2.2.4.2](#)). The number of **clientTimeStamps** child nodes MUST equal the number of **termSetIds** child nodes and these two sets of child nodes MUST be in one-to-one correspondence. For each term set specified in **termSetIds**, if the term set has been updated since the time specified by the corresponding time stamp in **clientTimeStamps**, the protocol server MUST return the data for the term set. Otherwise, the protocol server MUST return an empty node for the term set. An empty string with no term set information MUST be returned if this node is absent. A protocol client can request that term set data be returned regardless of last update time by specifying the text string "1900-01-01T00:00:00" instead of the integer number for the time stamp (since unparseable values are treated as 0).

**clientVersions:** The server version numbers that the term set data stored on the client was retrieved from. The number of **clientVersions** child nodes MUST equal the number of **termSetIds** child nodes and these two sets of child nodes MUST be in one-to-one correspondence. For each term set specified in **termSetIds**, if the term set is already stored on the client it MUST send "1", otherwise it MUST send zero ("0"). This is an XML encoded **string** that MUST conform to the schema of the **ClientVersionsForGetTermSetsClientService** complex type (section [2.2.4.3](#)). An empty string with no term set information MUST be returned if this node is absent.

### 3.1.4.6.2.2 GetTermSetsResponse

The **GetTermSetsResponse** element specifies the result data for the **GetTermSets WSDL operation**.

```
<xs:element name="GetTermSetsResponse" xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="0" maxOccurs="1" name="GetTermSetsResult" type="xs:string"/>
      <xs:element minOccurs="0" maxOccurs="1" name="serverTermSetTimeStampXml"
type="xs:string"/>
    </xs:sequence>
  </xs:complexType>
</xs:element>
```

**GetTermSetsResult:** The data for the requested **term sets**, which is an XML encoded string that MUST conform to the schema of the GetTermSetsResponseObject complex type (section [2.2.4.4](#)). As described in the definition of the **clientTimeStamps** element of **GetTermSets**, the returned data for some term sets are empty if the term set has not been updated since the time specified by the corresponding timestamp in clientTimeStamps.

**serverTermSetTimeStampXml:** The time stamps specifying the most recent update times for the requested term sets, which is an XML encoded **string** that MUST conform to the schema of the **ServerTermSetTimeStampsForGetTermSetsClientService** complex type (section [2.2.4.12](#)).

#### 3.1.4.6.3 Complex Types

None.

#### 3.1.4.6.4 Simple Types

None.

#### 3.1.4.6.5 Attributes

None.

#### 3.1.4.6.6 Groups

None.

#### 3.1.4.6.7 Attribute Groups

None.

#### 3.1.5 Timer Events

None.

#### 3.1.6 Other Local Events

None.

## 4 Protocol Examples

The following is an example of how a request for a term set that has never been requested before is made.

```
<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
      <GetTermSets xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
        <sharedServiceIds>&lt;/sspIds&gt;&lt;/sspId&gt;&lt;/sspId&gt;&lt;/sspId&gt;&lt;/sharedServiceIds>
        </termSetIds>&lt;/termSetIds&gt;&lt;/termSetIds&gt;&lt;/termSetIds><lcid>1033</lcid>
        <clientTimeStamps>&lt;/dateTimes&gt;&lt;/dateTimes&gt;&lt;/clientTimeStamps><clientVersions>&lt;/versions
&gt;&lt;/version&gt;&lt;/version&gt;&lt;/versions&gt;</clientVersions></GetTermSets>
      </soap:Body>
    </soap:Envelope>
```

This is the response of that request. The term set is serialized and returned because the old update time was passed.

```
<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <soap:Body><GetTermSetsResponse
    xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
      <GetTermSetsResult>&lt;/Container&gt;&lt;/TermStore&gt;&lt;/TS a9="c6baf284-1e99-4650-
b84d-e28794856d21" a17="true" a11="" a16="false" a12="Deleted TermSet" a68="" /&gt;&lt;/T
a9="c7c0785f-9c5a-41d9-a1bd-5611f4480e21" a21="false" a61="0"&gt;&lt;/LS&gt;&lt;/TL a32="Bar"
a31="true" /&gt;&lt;/LS&gt;&lt;/DS /&gt;&lt;/TMS&gt;&lt;/TM a24="c6baf284-1e99-4650-b84d-
e28794856d21" a12="Deleted TermSet" a40="" a17="true" a67="" a45="c7c0785f-9c5a-41d9-a1bd-
5611f4480e21" /&gt;&lt;/TMS&gt;&lt;/T&gt;&lt;/T a9="b90e03bd-7e0f-4f27-b960-0d9e4d2ae5af"
a21="false" a61="0"&gt;&lt;/LS&gt;&lt;/TL a32="Baz" a31="true" /&gt;&lt;/LS&gt;&lt;/DS
/&gt;&lt;/TMS&gt;&lt;/TM a24="c6baf284-1e99-4650-b84d-e28794856d21" a12="Deleted TermSet"
a40="" a17="true" a67="" a45="b90e03bd-7e0f-4f27-b960-0d9e4d2ae5af"
/&gt;&lt;/TMS&gt;&lt;/T&gt;&lt;/T a9="1b34a55b-a2c0-46a8-8b1f-77805a72edfa" a21="false"
a61="0"&gt;&lt;/LS&gt;&lt;/TL a32="myValue" a31="true" /&gt;&lt;/LS&gt;&lt;/DS
/&gt;&lt;/TMS&gt;&lt;/TM a24="c6baf284-1e99-4650-b84d-e28794856d21" a12="Deleted TermSet"
a40="" a17="true" a67="" a45="1b34a55b-a2c0-46a8-8b1f-77805a72edfa"
/&gt;&lt;/TMS&gt;&lt;/T&gt;&lt;/TermStore&gt;&lt;/Container&gt;</GetTermSetsResult>
      <serverTermSetTimeStampXml>&lt;/Container&gt;&lt;/Node Time="633767110910230000"
TermId="c6baf284-1e99-4650-b84d-e28794856d21"
/&gt;&lt;/Container&gt;</serverTermSetTimeStampXml>
    </GetTermSetsResponse>
  </soap:Body>
</soap:Envelope>
```

The following is a request/response for adding new terms to a term set. It adds three terms, one directly under the root, one under that new term, and one under a term that already exists.

```
<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema"
    xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
      <AddTerms xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
        <sharedServiceId>ff579fe0-0f63-41c7-b9f7-0ceba78d2e5f</sharedServiceId>
        <termSetId>97eala2d-0eb4-4ac0-acfd-862d8fec7607</termSetId>
```

```

        <lcid>1033</lcid>
        <newTerms>&lt;newTerms&gt;&lt;newTerm label=&quot;Under Root&quot;
        clientId=&quot;1&quot; parentTermId=&quot;00000000-0000-0000-0000-
        000000000000&quot;&gt;&gt;&lt;newTerm label=&quot;Under new term&quot; clientId=&quot;2&quot;
        parentTermId=&quot;1&quot; /&gt;&lt;/newTerm&gt;&lt;newTerm label=&quot;Under existing
        term&quot; clientId=&quot;3&quot; parentTermId=&quot;9884bef8-17e3-4e56-ac3b-
        5b86d20a8d4b&quot; /&gt;&lt;/newTerms&gt;</newTerms>
    </AddTerms>
</soap:Body>
</soap:Envelope>

```

## Response

```

<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <soap:Body>
      <AddTermsResponse xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
        <AddTermsResult>&lt;?xml version="1.0" encoding="utf-
        16"?&gt;&lt;TermStore&gt;&lt;T a9="3f5dc4ad-9ca2-489c-9444-a84bce1312e1" a21="false"
        a61="1"&gt;&lt;LS&gt;&lt;TL a32="Under Root" a31="true" /&gt;&lt;LS&gt;&lt;DS
        /&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-4ac0-acfd-862d8fec7607" a12="Open" a40=""
        a17="true" a67="" a45="3f5dc4ad-9ca2-489c-9444-a84bce1312e1" a69="true"
        /&gt;&lt;/TMS&gt;&lt;T&gt;&lt;T a9="5add558b-10ba-41dc-8b7e-473b807e9044" a21="false"
        a61="2"&gt;&lt;LS&gt;&lt;TL a32="Under new term" a31="true" /&gt;&lt;LS&gt;&lt;DS
        /&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-4ac0-acfd-862d8fec7607" a12="Open" a25="3f5dc4ad-
        9ca2-489c-9444-a84bce1312e1" a40="Under Root" a17="true" a67="" a45="3f5dc4ad-9ca2-489c-9444-
        a84bce1312e1;5add558b-10ba-41dc-8b7e-473b807e9044" /&gt;&lt;/TMS&gt;&lt;T&gt;&lt;T
        a9="39f10c1a-b8d5-4546-ae8-4d692d5f29ae" a21="false" a61="3"&gt;&lt;LS&gt;&lt;TL a32="Under
        existing term" a31="true" /&gt;&lt;LS&gt;&lt;DS /&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-
        4ac0-acfd-862d8fec7607" a12="Open" a25="9884bef8-17e3-4e56-ac3b-5b86d20a8d4b" a40="Bar"
        a17="true" a67="" a45="9884bef8-17e3-4e56-ac3b-5b86d20a8d4b;39f10c1a-b8d5-4546-ae8-
        4d692d5f29ae" /&gt;&lt;/TMS&gt;&lt;T&gt;&lt;/TermStore&gt;</AddTermsResult>
      </AddTermsResponse>
    </soap:Body>
  </soap:Envelope>

```

The following is a request/response for querying for terms that begin with "un".

```

<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
      <GetTermsByLabel xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
        <label>un</label>
        <lcid>1033</lcid>
        <matchOption>StartsWith</matchOption>
        <resultCollectionSize>40</resultCollectionSize>
        <addIfNotFound>>false</addIfNotFound>
      </GetTermsByLabel>
    </soap:Body>
  </soap:Envelope>

```

## Response

```

<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <soap:Body>

```

```

    <GetTermsByLabelResponse
xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
  <GetTermsByLabelResult>&lt;?xml version="1.0" encoding="utf-
16"?&gt;&lt;TermStore&gt;&lt;T a9="39f10c1a-b8d5-4546-ae8-4d692d5f29ae" a21="false"
a61="0"&gt;&lt;LS&gt;&lt;TL a32="Under existing term" a31="true" /&gt;&lt;/LS&gt;&lt;DS
/&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-4ac0-acfd-862d8fec7607" a12="Open" a15="0"
a25="9884bef8-17e3-4e56-ac3b-5b86d20a8d4b" a40="Bar" a17="true"
/&gt;&lt;/TMS&gt;&lt;/T&gt;&lt;T a9="5add558b-10ba-41dc-8b7e-473b807e9044" a21="false"
a61="0"&gt;&lt;LS&gt;&lt;TL a32="Under new term" a31="true" /&gt;&lt;/LS&gt;&lt;DS
/&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-4ac0-acfd-862d8fec7607" a12="Open" a15="0"
a25="3f5dc4ad-9ca2-489c-9444-a84bce1312e1" a40="Under Root" a17="true"
/&gt;&lt;/TMS&gt;&lt;/T&gt;&lt;T a9="5add558b-10ba-41dc-8b7e-473b807e9044" a21="false"
a61="0"&gt;&lt;LS&gt;&lt;TL a32="Under Root" a31="true" /&gt;&lt;/LS&gt;&lt;DS
/&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-4ac0-acfd-862d8fec7607" a12="Open" a15="0"
a25="00000000-0000-0000-0000-000000000000" a40="" a17="true"
/&gt;&lt;/TMS&gt;&lt;/TermStore&gt;</GetTermsByLabelResult>
</GetTermsByLabelResponse>
</soap:Body>
</soap:Envelope>

```

The following is a request/response for querying for keyword terms by **GUID**:

```

<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
    <soap:Body>
      <GetKeywordTermsByGuids
xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
        <termIds>&lt;termIds&gt;&lt;termId&gt;5add558b-10ba-41dc-8b7e-
473b807e9044&lt;/termId&gt;&lt;/termIds>
          <lcid>1033</lcid>
        </GetKeywordTermsByGuids>
      </soap:Body>
    </soap:Envelope>

```

## Response

```

<?xml version="1.0" encoding="utf-8"?>
  <soap:Envelope xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <soap:Body>
      <GetKeywordTermsByGuidsResponse
xmlns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
        <GetKeywordTermsByGuidsResult>&lt;?xml version="1.0" encoding="utf-
16"?&gt;&lt;TermStore&gt;&lt;T a9="5add558b-10ba-41dc-8b7e-473b807e9044" a21="false"
a61="2"&gt;&lt;LS&gt;&lt;TL a32="Under new term" a31="true" /&gt;&lt;/LS&gt;&lt;DS
/&gt;&lt;TMS&gt;&lt;TM a24="97eala2d-0eb4-4ac0-acfd-862d8fec7607" a12="Open" a25="3f5dc4ad-
9ca2-489c-9444-a84bce1312e1" a40="Under Root" a17="true" a67="" a45="3f5dc4ad-9ca2-489c-9444-
a84bce1312e1;5add558b-10ba-41dc-8b7e-473b807e9044"
/&gt;&lt;/TMS&gt;&lt;/TermStore&gt;</GetKeywordTermsByGuidsResult>
      </GetKeywordTermsByGuidsResponse>
    </soap:Body>
  </soap:Envelope>

```

## 5 Security

### 5.1 Security Considerations for Implementers

This protocol introduces no additional security considerations beyond those applicable to its underlying protocols.

### 5.2 Index of Security Parameters

None.

Preliminary

## 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:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:http="http://schemas.xmlsoap.org/wsdl/http/"
xmlns:s1="http://microsoft.com/wsdl/types/"
xmlns:soap12="http://schemas.xmlsoap.org/wsdl/soap12/"
xmlns:tns="http://schemas.microsoft.com/sharepoint/taxonomy/soap/"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/sharepoint/taxonomy/soap/"
xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/">
  <wsdl:documentation>This web service is designed for Office client applications to
  use</wsdl:documentation>
  <wsdl:types>
    <xs:schema elementFormDefault="qualified"
targetNamespace="http://schemas.microsoft.com/sharepoint/taxonomy/soap/">
      <xs:import namespace="http://microsoft.com/wsdl/types/">
        <xs:element name="GetTermSets">
          <xs:complexType>
            <xs:sequence>
              <xs:element minOccurs="0" maxOccurs="1" name="sharedServiceIds"
type="xs:string"/>
              <xs:element minOccurs="0" maxOccurs="1" name="termSetIds" type="xs:string"/>
              <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
              <xs:element minOccurs="0" maxOccurs="1" name="clientTimeStamps"
type="xs:string"/>
              <xs:element minOccurs="0" maxOccurs="1" name="clientVersions" type="xs:string"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="GetTermSetsResponse">
          <xs:complexType>
            <xs:sequence>
              <xs:element minOccurs="0" maxOccurs="1" name="GetTermSetsResult"
type="xs:string"/>
              <xs:element minOccurs="0" maxOccurs="1" name="serverTermSetTimeStampXml"
type="xs:string"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:element name="GetTermsByLabel">
          <xs:complexType>
            <xs:sequence>
              <xs:element minOccurs="0" maxOccurs="1" name="label" type="xs:string"/>
              <xs:element minOccurs="1" maxOccurs="1" name="lcid" type="xs:int"/>
              <xs:element minOccurs="1" maxOccurs="1" name="matchOption"
type="tns:StringMatchOption"/>
              <xs:element minOccurs="1" maxOccurs="1" name="resultCollectionSize"
type="xs:int"/>
              <xs:element minOccurs="0" maxOccurs="1" name="termIds" type="xs:string"/>
              <xs:element minOccurs="1" maxOccurs="1" name="addIfNotFound" type="xs:boolean"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
        <xs:simpleType name="StringMatchOption">
          <xs:restriction base="xs:string">
            <xs:enumeration value="StartsWith"/>
            <xs:enumeration value="ExactMatch"/>
          </xs:restriction>
        </xs:simpleType>
        <xs:element name="GetTermsByLabelResponse">
          <xs:complexType>
            <xs:sequence>
              <xs:element minOccurs="0" maxOccurs="1" name="GetTermsByLabelResult"
type="xs:string"/>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:schema>
    </wsdl:types>
  </wsdl:definitions>
```

```

    </xs:sequence>
  </xs:complexType>
</xs:element>
<xs:element name="AddTerms">
  <xs:complexType>
    <xs:sequence>
      <xs:element minOccurs="1" maxOccurs="1" name="sharedServiceId" type="s1:guid"/>
      <xs:element minOccurs="1" maxOccurs="1" name="termSetId" type="s1:guid"/>
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```

```

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    <wsdl:output message="tns:GetTermSetsSoapOut"/>
  </wsdl:operation>
  <wsdl:operation name="GetTermsByLabel">
    <wsdl:input message="tns:GetTermsByLabelSoapIn"/>
    <wsdl:output message="tns:GetTermsByLabelSoapOut"/>
  </wsdl:operation>
  <wsdl:operation name="AddTerms">
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    <wsdl:output message="tns:AddTermsSoapOut"/>
  </wsdl:operation>
  <wsdl:operation name="GetKeywordTermsByGuids">
    <wsdl:input message="tns:GetKeywordTermsByGuidsSoapIn"/>
    <wsdl:output message="tns:GetKeywordTermsByGuidsSoapOut"/>
  </wsdl:operation>
  <wsdl:operation name="GetChildTermsInTermSet">
    <wsdl:input message="tns:GetChildTermsInTermSetSoapIn"/>
    <wsdl:output message="tns:GetChildTermsInTermSetSoapOut"/>
  </wsdl:operation>
  <wsdl:operation name="GetChildTermsInTerm">
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    <wsdl:output>
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style="document"/>
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    <wsdl:operation name="GetKeywordTermsByGuids">
      <soap:operation
soapAction="http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetKeywordTermsByGuids"
style="document"/>
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        <soap:body use="literal"/>
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    <wsdl:operation name="GetChildTermsInTermSet">
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soapAction="http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetChildTermsInTermSet"
style="document"/>
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    </wsdl:operation>
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      <soap:operation
soapAction="http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetChildTermsInTerm"
style="document"/>
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        <soap:body use="literal"/>
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    </wsdl:operation>
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type="tns:Taxonomy_x0020_web_x0020_serviceSoap">
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    <wsdl:operation name="GetTermSets">
      <soap12:operation
soapAction="http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetTermSets"
style="document"/>
      <wsdl:input>
        <soap12:body use="literal"/>
      </wsdl:input>
      <wsdl:output>
        <soap12:body use="literal"/>
      </wsdl:output>
    </wsdl:operation>

```

```

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    </wsdl:operation>
    <wsdl:operation name="GetTermsByLabel">
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style="document"/>
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    </wsdl:operation>
    <wsdl:operation name="AddTerms">
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soapAction="http://schemas.microsoft.com/sharepoint/taxonomy/soap/AddTerms"
style="document"/>
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        <wsdl:output>
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    <wsdl:operation name="GetKeywordTermsByGuids">
        <soap12:operation
soapAction="http://schemas.microsoft.com/sharepoint/taxonomy/soap/GetKeywordTermsByGuids"
style="document"/>
        <wsdl:input>
            <soap12:body use="literal"/>
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style="document"/>
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style="document"/>
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        <wsdl:output>
            <soap12:body use="literal"/>
        </wsdl:output>
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</wsdl:binding>
<wsdl:message name="AddTermsSoapIn">
    <wsdl:part name="parameters" element="tns:AddTerms"/>
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<wsdl:message name="AddTermsSoapOut">
    <wsdl:part name="parameters" element="tns:AddTermsResponse"/>
</wsdl:message>
<wsdl:message name="GetChildTermsInTermSetSoapIn">
    <wsdl:part name="parameters" element="tns:GetChildTermsInTermSet"/>
</wsdl:message>
<wsdl:message name="GetChildTermsInTermSetSoapOut">
    <wsdl:part name="parameters" element="tns:GetChildTermsInTermSetResponse"/>

```

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<wsdl:message name="GetChildTermsInTermSoapOut">
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</wsdl:message>
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  <wsdl:part name="parameters" element="tns:GetKeywordTermsByGuids"/>
</wsdl:message>
<wsdl:message name="GetKeywordTermsByGuidsSoapOut">
  <wsdl:part name="parameters" element="tns:GetKeywordTermsByGuidsResponse"/>
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  <wsdl:part name="parameters" element="tns:GetTermSets"/>
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<wsdl:message name="GetTermSetsSoapOut">
  <wsdl:part name="parameters" element="tns:GetTermSetsResponse"/>
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</wsdl:definitions>
```

Preliminary

## 7 Appendix B: Product Behavior

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

- Microsoft Office 2010 suites
- Microsoft Office 2013
- Microsoft SharePoint Server 2010
- Microsoft SharePoint Server 2013
- Microsoft Office 2016
- Microsoft SharePoint Server 2016
- Microsoft Office 2019
- Microsoft SharePoint Server 2019
- Microsoft Office 2021
- Microsoft SharePoint Server Subscription Edition Preview

Exceptions, if any, are noted in this section. If an update version, service pack or Knowledge Base (KB) number appears with a product name, the behavior changed in that update. The new behavior also applies to subsequent updates unless otherwise specified. If a product edition appears with the product version, behavior is different in that product edition.

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

<1> [Section 3.1.4.1.2.1](#): If an empty GUID is specified but the default keywords **term store** is undefined or inaccessible, SharePoint Server 2010 and SharePoint Server 2013 raise a null reference exception. There can be multiple term stores associated with a site collection. One of them can be specified as the default keywords term store. If none is specified, the default keywords term store is undefined.

<2> [Section 3.1.4.1.2.1](#): If the **term set** does not exist SharePoint Server 2010 and SharePoint Server 2013 raise a null reference exception.

<3> [Section 3.1.4.2.2.1](#): If the term store is not reachable, SharePoint Server 2010 and SharePoint Server 2013 raise an argument-out-of-range exception.

<4> [Section 3.1.4.2.2.1](#): If the **term** does not exist, SharePoint Server 2010 and SharePoint Server 2013 raise an argument-out-of-range exception.

<5> [Section 3.1.4.2.2.1](#): If the term set does not exist, SharePoint Server 2010 and SharePoint Server 2013 raise an argument-out-of-range exception.

<6> [Section 3.1.4.3.2.1](#): If the term store is not reachable, SharePoint Server 2010 and SharePoint Server 2013 raise an argument-out-of-range exception.

<7> [Section 3.1.4.3.2.1](#): If the term set does not exist, SharePoint Server 2010 and SharePoint Server 2013 raise a null reference exception.



[<8> Section 3.1.4.5.2.1](#): When attempting to add unfound terms, SharePoint Server 2010 and SharePoint Server 2013 raise a null reference exception, if the default keywords term store is not accessible or not defined.

[<9> Section 3.1.4.6](#): SharePoint Server 2010 and SharePoint Server 2013 raise a null reference exception if it cannot find a requested term set.

Preliminary

## 8 Change Tracking

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

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

- A document revision that incorporates changes to interoperability requirements.
- A document revision that captures changes to protocol functionality.

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

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

The changes made to this document are listed in the following table. For more information, please contact [dochelp@microsoft.com](mailto:dochelp@microsoft.com).

Section	Description	Revision class
<a href="#">2.2.4.9</a> SerializedSharedTerm	Added WssId informative link.	Minor
<a href="#">7</a> Appendix B: Product Behavior	Updated list of supported products.	major
7 Appendix B: Product Behavior	Updated list of supported products.	Major

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