[MS-OXWSOLPS]:

Online Personal Search Web Service Protocol

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Revision Summary

Date	Revision History	Revision Class	Comments
9/14/2015	1.0	New	Released new document.
6/13/2016	1.0	None	No changes to the meaning, language, or formatting of the technical content.
9/14/2016	1.0	None	No changes to the meaning, language, or formatting of the technical content.
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10/1/2018	3.2	Minor	Clarified the meaning of the technical content.
3/19/2019	3.3	Minor	Clarified the meaning of the technical content.

Table of Contents

1 Introduction

The Online Personal Search Web Service Protocol is used to search the contents of one or more servers, and return the results of that search.

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:

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].

Kerberos: An authentication system that enables two parties to exchange private information across an otherwise open network by assigning a unique key (called a ticket) to each user that logs on to the network and then embedding these tickets into messages sent by the users. For more information, see [MS-KILE].

mailbox: A message store that contains email, calendar items, and other Message objects for a single recipient.

NT LAN Manager (NTLM) Authentication Protocol: A protocol using a challenge-response mechanism for authentication in which clients are able to verify their identities without sending a password to the server. It consists of three messages, commonly referred to as Type 1 (negotiation), Type 2 (challenge) and Type 3 (authentication).

Simple Mail Transfer Protocol (SMTP): A member of the TCP/IP suite of protocols that is used to transport Internet messages, as described in [RFC5321].

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 header: A mechanism for implementing extensions to a SOAP message in a decentralized manner without prior agreement between the communicating parties. See [SOAP1.2-1/2007] section 5.2 for more information.

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 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.

WSDL port type: A named set of logically-related, abstract **Web Services Description Language (WSDL)** operations and messages.

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

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

1.2 References

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

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information.

[MS-KQL] Microsoft Corporation, "Keyword Query Language Structure Protocol".

[MS-OXWSCDATA] Microsoft Corporation, "Common Web Service Data Types".

[MS-OXWSCONV] Microsoft Corporation, "Conversations Web Service Protocol".

[MS-OXWSCORE] Microsoft Corporation, "Core Items Web Service Protocol".

[MS-OXWSCVTID] Microsoft Corporation, "Convert Item Identifier Web Service Protocol".

[MS-OXWSPERS] Microsoft Corporation, "Persona Web Service Protocol".

[MS-OXWSSRCH] Microsoft Corporation, "Mailbox Search Web Service Protocol".

[MS-OXWSXPROP] Microsoft Corporation, "Extended Properties Structure".

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

[RFC3066] Alvestrand, H., "Tags for the Identification of Languages", BCP 47, RFC 3066, January 2001, http://www.ietf.org/rfc/rfc3066.txt

[RFC7230] Fielding, R., and Reschke, J., Eds., "Hypertext Transfer Protocol (HTTP/1.1): Message Syntax and Routing", RFC 7230, June 2014, http://www.rfc-editor.org/rfc/rfc7230.txt

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

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

[WSIBASIC] Ballinger, K., Ehnebuske, D., Gudgin, M., et al., Eds., "Basic Profile Version 1.0", Final Material, April 2004, http://www.ws-i.org/Profiles/BasicProfile-1.0-2004-04-16.html

[XMLNS] Bray, T., Hollander, D., Layman, A., et al., Eds., "Namespaces in XML 1.0 (Third Edition)", W3C Recommendation, December 2009, https://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, https://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, https://www.w3.org/TR/2004/REC-xmlschema-2-20041028/

1.2.2 Informative References

None.

1.3 Overview

This protocol enables a client to search a collection of items and return information about those items (if any) that match. The client specifies search criteria as text. The criteria are interpreted by the protocol server, which then attempts to find items that match. The set of items to be searched is also specified by the client. A typical scenario for using this protocol is an e-mail client application that enables users to find messages in their mailbox.

1.4 Relationship to Other Protocols

This protocol uses the Keyword Query Language, as described in [MS-KQL], as the syntax for expressing the search criteria.

1.5 Prerequisites/Preconditions

This protocol operates between a protocol client and a protocol server that provides access to the user's documents (for example, email). The protocol requires that the client be able to form a URL identifying the correct protocol server endpoint, and that it be able to authenticate against that endpoint.

1.6 Applicability Statement

The protocol is designed for the execution of queries with no more than 20 OR clauses.

1.7 Versioning and Capability Negotiation

- Supported Transports: **HTTP**, **HTTPS**
- Protocol Versions: This protocol has only one **WSDL port type** version with a single set of messages, but that WSDL port type has been extended by adding new operations. The use of these operations is specified in section 3.1.
- Security and Authentication Methods: This protocol supports the following authentication methods: **NT LAN Manager Protocol (NTLM)**, NTLM, and **Kerberos**. These authentication methods are described in section 3.1.4.
- Capability Negotiation: This protocol does not support version negotiation.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

2 Messages

In the following sections, the schema definition might differ from the processing rules imposed by the protocol. The **WSDL** in this specification provides a base description of the protocol. The schema in this specification provides a base description of the message syntax. The text that specifies the WSDL and schema might specify restrictions that reflect actual protocol behavior. For example, the schema definition might allow for an element to be empty, null, or not present, but the behavior of the protocol as specified restricts the same elements to being non-empty, not null, or present.

2.1 Transport

Messages MUST be transported by using HTTP or HTTPS, as specified in [RFC7230].

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 defined in [XMLSCHEMA1/2] and [XMLSCHEMA2/2], and **Web Services Description Language (WSDL)**, as defined 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.

Abbreviation	Namespace	Reference
soap	http://schemas.xmlsoap.org/wsdl/soap/	**[SOAP1.1]**
wsdl	http://schemas.xmlsoap.org/wsdl/	**[WSDL]**
t	http://schemas.microsoft.com/exchange/services/2006/types	
tns	http://schemas.microsoft.com/exchange/services/2006/types	
m	http://schemas.microsoft.com/exchange/services/2006/messages	
xs	http://www.w3.org/2001/xmlschema	[XMLSCHEMA2/2]
wsi	http://ws-i.org/schemas/conformanceClaim/	[WSIBASIC]

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
SearchDiagnosticsType	For internal use only.

2.2.4.1 SearchDiagnosticsType Complex Type

The **SearchDiagnosticsType** complex type is intended for internal use only.

```
  <xs:complexType name="SearchDiagnosticsType">
  <xs:sequence>
      <xs:sequence>
        <xs:any namespace="##any" processContents="skip" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:sequence>
  </xs:complexType>
```

The **SearchDiagnosticsType** complex type is used by the **SearchResultsType** complex type (section 3.1.4.2.3.13), and the **SearchSuggestionsType** complex type (section 3.1.4.3.3.4).

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
SuggestionKindType	Specifies the type(s) of query suggestions that can be requested.

2.2.5.1 SuggestionKindType Simple Type

The **SuggestionKindType** simple type specifies the type(s) of query suggestions that can be requested.

```
<xs:simpleType name="SuggestionKindType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="Keywords"/>
        <xs:enumeration value="People"/>
```

```
          <xs:enumeration value="Hashtags"/>
          <xs:enumeration value="QueryHistory"/>
          <xs:enumeration value="OneDriveQueryHistory"/>
          <xs:enumeration value="All"/>
        </xs:restriction>
      </xs:simpleType>
    </xs:list>
  </xs:simpleType>
```

The **SuggestionKindType** simple type is used by the **GetSearchSuggestions** complex type (section 3.1.4.3.3.1). the **SuggestionType** complex type (section 3.1.4.3.3.5), and the **StartSearchSession** complex type (section 3.1.4.4.3.1).

Value	Meaning
None	Nothing requested.
Keywords	A keyword suggestion. This specifies query text that doesn't identify a person.
People	A people suggestion. This type attempts to match characters with a name.
Hashtags	A hashtag suggestion.
QueryHistory	The search history.
OneDriveQueryHistory	Not used.
All	Specifies all suggested values.

2.2.6 Attributes

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

2.2.7 Groups

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

2.2.8 Attribute Groups

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

3 Protocol Details

The 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 that are returned by the transport are passed directly back to the higher-layer protocol or application.

In the following sections, the schema definition might be less restrictive than the processing rules imposed by the protocol. The **WSDL** in this specification matches the WSDL that shipped with the product and provides a base description of the schema. The text that introduces the WSDL specifies additional restrictions that reflect actual Microsoft product behavior. For example, the schema definition might allow for an element to be empty, null, or not present but the behavior of the protocol as specified restricts the same elements to being non-empty, not null and present.

3.1 Common Details

This protocol defines a single **WSDL port type** with four operations. These operations enable client applications to search for items in a user's **mailbox**.

3.1.1 Abstract Data Model

None.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Message Processing Events and Sequencing Rules

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

Operation	Description
EndSearchSession	Indicates to the protocol server that the client has finished searching.
ExecuteSearch	The protocol client requests that the protocol server find and return information from any items that match the specified query string.
GetSearchSuggestions	The protocol client requests that the protocol server offer possible query strings, based on some text provided.
StartSearchSession	Indicates to the protocol server that the client is about to search.

3.1.4.1 EndSearchSession Operation

The **EndSearchSession** operation is a request to end a search session. The protocol client indicates to the server that no queries will be sent until a new session is started.

The following is the WSDL port specification of the operation.

```
    <wsdl:operation name="EndSearchSession">
      <wsdl:input message="tns:EndSearchSessionSoapIn" />
      <wsdl:output message="tns:EndSearchSessionSoapOut" />
    </wsdl:operation>
```

The following is the WSDL binding specification of the operation.

```
    <wsdl:operation name="EndSearchSession">
      <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/EndSearchSession" />
      <wsdl:input>
        <soap:header message="tns:EndSearchSessionSoapIn" part="RequestVersion"
use="literal"/>
        <soap:header message="tns:EndSearchSessionSoapIn" part="MailboxCulture"
use="literal"/>
        <soap:body parts="request" use="literal" />
      </wsdl:input>
      <wsdl:output>
        <soap:body parts="EndSearchSessionResult" use="literal" />
        <soap:header message="tns:EndSearchSessionSoapOut" part="ServerVersion"
use="literal"/>
      </wsdl:output>
    </wsdl:operation>
```

3.1.4.1.1 Messages

The following table lists the WSDL message definitions that are specific to this operation.

Message	Description
EndSearchSessionSoapIn	Specifies the SOAP message that defines the end of the search session.
EndSearchSessionSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.1.1.1 EndSearchSessionSoapIn Message

The **EndSearchSessionSoapIn** WSDL message carries the request to end the search session.

```
  <wsdl:message name="EndSearchSessionSoapIn">
    <wsdl:part name="request" element="tns:EndSearchSession"/>
    <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
    <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
  </wsdl:message>
```

The **EndSearchSessionSoapIn** WSDL message is the input message for the **EndSearchSession** operation (section 3.1.4.1).

The parts of the **EndSearchSessionSoapIn** WSDL message are described in the following table.

Part	Element/type	Description
request	**tns:EndSearchSession** (section 3.1.4.1.2.1)	Specifies the **SOAP body** of the request.

Part	Element/type	Description
MailboxCulture	**t:MailboxCulture** ([MS-OXWSCDATA] section 2.2.3.6)	Specifies a **SOAP header** that identifies the culture to use for accessing the **mailbox**. The cultures are defined by [RFC3066].
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.3.9)	Specifies a SOAP header that identifies the schema version for the **EndSearchSession** operation request.

3.1.4.1.1.2 EndSearchSessionSoapOut Message

The **EndSearchSessionSoapOut** WSDL message specifies the server response to the **EndSearchSession** operation to end a search session.

```
<wsdl:message name="EndSearchSessionSoapOut">
  <wsdl:part name="EndSearchSessionResult" element="tns:EndSearchSessionResponse"/>
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **EndSearchSessionSoapOut** WSDL message is the output message for the **EndSearchSession** operation (section 3.1.4.1).

The parts of the **EndSearchSessionSoapOut** WSDL message are described in the following table.

Part	Element/type	Description
EndSearchSessionResult	**tns:EndSearchSessionResponse** (section 3.1.4.1.2.2)	Specifies the **SOAP body** of the response message to an **EndSearchSession** operation request.
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.3.10)	Specifies a **SOAP header** that identifies the server version for the response.

3.1.4.1.2 Elements

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

Element	Description
EndSearchSession	Specifies the options required to end a search session.
EndSearchSessionResponse	Specifies the response body from a request to end a search session.

3.1.4.1.2.1 tns:EndSearchSession Element

The **EndSearchSession** element specifies the base element for an **EndSearchSession** operation (section 3.1.4.1) request.

```
<xs:element name="EndSearchSession" type="m:EndSearchSession"/>
```

3.1.4.1.2.2 tns:EndSearchSessionResponse Element

The **EndSearchSessionResponse** element specifies the response message for an **EndSearchSession** operation (section 3.1.4.1).

```
<xs:element name="EndSearchSessionResponse" type="m:EndSearchSessionResponseMessage"/>
```

3.1.4.1.3 Complex Types

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

Complex type	Description
EndSearchSession	Specifies the options required to end a search session.
EndSearchSessionResponseMessage	Specifies the response from a request to end a search session.

3.1.4.1.3.1 EndSearchSession Complex Type

The **EndSearchSession** complex type specifies a request to end a search session. The protocol client indicates to the server that other search-related requests will not follow for some unspecified time. This can be used by the protocol server to release resources associated with the session. The **EndSearchSession** complex type extends the **BaseRequestType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.17.

```
<xs:complexType name="EndSearchSession">
  <xs:complexContent>
    <xs:extension base="m:BaseRequestType">
      <xs:sequence>
        <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SearchSessionId	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	Uniquely identifies the session to be ended.

3.1.4.1.3.2 EndSearchSessionResponseMessage Complex Type

The **EndSearchSessionResponseMessage** complex type extends the **ResponseMessageType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.65.

```
<xs:complexType name="EndSearchSessionResponseMessage">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType" />
```

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

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 ExecuteSearch Operation

The **ExecuteSearch** operation is a search for content matching a query string.

The following is the WSDL port specification of the operation.

```
    <wsdl:operation name="ExecuteSearch">
      <wsdl:input message="tns:ExecuteSearchSoapIn" />
      <wsdl:output message="tns:ExecuteSearchSoapOut" />
    </wsdl:operation>
```

The following is the WSDL binding specification of the **ExecuteSearch** operation.

```
    <wsdl:operation name="ExecuteSearch">
      <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/ExecuteSearch" />
      <wsdl:input>
        <soap:header message="tns:ExecuteSearchSoapIn" part="RequestVersion" use="literal"/>
        <soap:header message="tns:ExecuteSearchSoapIn" part="MailboxCulture" use="literal"/>
        <soap:body parts="request" use="literal" />
      </wsdl:input>
      <wsdl:output>
        <soap:body parts="ExecuteSearchResult" use="literal" />
        <soap:header message="tns:ExecuteSearchSoapOut" part="ServerVersion" use="literal"/>
      </wsdl:output>
    </wsdl:operation>
```

3.1.4.2.1 Messages

The following table lists the WSDL message definitions that are specific to this operation.

Message	Description
ExecuteSearchSoapIn	Specifies the SOAP message that initiates the search.
ExecuteSearchSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.2.1.1 ExecuteSearchSoapIn Message

The **ExecuteSearchSoapIn** WSDL message requests the server to search for and return items matching a specified query.

```
<wsdl:message name="ExecuteSearchSoapIn">
  <wsdl:part name="request" element="tns:ExecuteSearch"/>
  <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **ExecuteSearchSoapIn** WSDL message is the input message for the **ExecuteSearch** operation (section 3.1.4.2).

The parts of the **ExecuteSearchSoapIn** WSDL message are described in the following table.

Part	Element/type	Description
request	**tns:ExecuteSearch** (section 3.1.4.2.2.1)	Specifies the **SOAP body** of the request.
MailboxCulture	**t:MailboxCulture** ([MS-OXWSCDATA] section 2.2.3.6)	Specifies a **SOAP header** that identifies the culture to use for accessing the **mailbox**. The cultures are defined by [RFC3066].
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.3.9)	Specifies a SOAP header that identifies the schema version for the **ExecuteSearch** operation request.

3.1.4.2.1.2 ExecuteSearchSoapOut Message

The **ExecuteSearchSoapOut** WSDL message specifies the server response to the **ExecuteSearch** operation to search for items.

```
<wsdl:message name="ExecuteSearchSoapOut">
  <wsdl:part name="ExecuteSearchResult" element="tns:ExecuteSearchResponse"/>
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **ExecuteSearchSoapOut** WSDL message is the output message for the **ExecuteSearch** operation (section 3.1.4.2).

The parts of the **ExecuteSearchSoapOut** WSDL message are described in the following table.

Part	Element/type	Description
ExecuteSearchResult	**tns:ExecuteSearchResponse** (section 3.1.4.2.2.2)	Specifies the **SOAP body** of the response message to an **ExecuteSearch** operation request (section 3.1.4.2).
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.3.10)	Specifies a **SOAP header** that identifies the server version for the response.

3.1.4.2.2 Elements

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

Element	Description
ExecuteSearch	Requests that the server search for items matching a query string.
ExecuteSearchResponse	Specifies the response body from a request to search.

3.1.4.2.2.1 tns:ExecuteSearch Element

The **ExecuteSearch** element specifies the base element for an **ExecuteSearch** operation (section 3.1.4.2) request.

```
<xs:element name="ExecuteSearch" type="m:ExecuteSearch"/>
```

3.1.4.2.2.2 tns:ExecuteSearchResponse Element

The **ExecuteSearchResponse** element specifies the response message for an **ExecuteSearch** operation (section 3.1.4.2).

```
<xs:element name="ExecuteSearchResponse" type="m:ExecuteSearchResponseMessage"/>
```

3.1.4.2.3 Complex Types

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

Complex type	Description
AnalyzedQuery	For internal use only.
ArrayOfSearchScopeType	Specifies the places in which the search will be conducted.
CustomSearchScopeType	Specifies the location of a search in a mailbox that might not be the user's primary mailbox.
DynamicRefinerQueryType	Specifies a dynamic refiner that the client requests the server to calculate over, and return with, the results of a query.
ExecuteSearch	Specifies the parameters required to conduct a search.
ExecuteSearchResponseMessage	Specifies the response from a search.
GroupSearchScopeType	Specifies a search of groups using the shortcut **MyGroups**.
LargeArchiveSearchScopeType	Specifies a search in the online archive mailbox for the user's account.
OneDriveSearchScopeType	For internal use only.
PrimaryMailboxSearchScopeType	Specifies the location of a search within a user's primary mailbox.

Complex type	Description
SearchFolderScopeType	Specifies the location of a folder-based search.
SearchRefinerType	Specifies a set of refinement (filter) definitions that are to be applied to a query.
SearchResultsType	Specifies a set of search results.
SingleGroupSearchScopeType	Specifies a single group to search, using identifiers.
SingleLargeArchiveSearchScopeType	For internal use only.
UnifiedGroupIdentity	Identifies the group to search.

3.1.4.2.3.1 AnalyzedQuery Complex Type

The **AnalyzedQuery** complex type is intended for internal use only.

```
  <xs:complexType name="AnalyzedQuery">
    <xs:sequence>
      <xs:element name="QueryLanguage" type="xs:string" minOccurs="1" maxOccurs="1"/>
      <xs:element name="SearchRestrictions" type="t:RestrictionType" minOccurs="1"
maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
```

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

Element name	Type	Description
QueryLanguage	**xs:string** ([XMLSCHEMA2/2])	For internal use only.
SearchRestrictions	**t:RestrictionType** ([MS-OXWSSRCH] section 2.2.4.30)	For internal use only.

3.1.4.2.3.2 ArrayOfSearchScopeType Complex Type

The **ArrayOfSearchScopeType** complex type represents a specification for the scope of a query.

```
  <xs:complexType name="ArrayOfSearchScopeType">
    <xs:sequence>
      <xs:element name="PrimaryMailboxSearchScope" type="t:PrimaryMailboxSearchScopeType"
minOccurs="0" maxOccurs="1"/>
      <xs:element name="LargeArchiveSearchScope" type="t:LargeArchiveSearchScopeType"
minOccurs="0" maxOccurs="1"/>
      <xs:element name="GroupSearchScope" type="t:GroupSearchScopeType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="CustomSearchScope" type="t:CustomSearchScopeType" minOccurs="0"
maxOccurs="4"/>
      <xs:element name="SingleGroupSearchScope" type="t:SingleGroupSearchScopeType"
minOccurs="0" maxOccurs="1"/>
      <xs:element name="OneDriveSearchScope" type="t:OneDriveSearchScopeType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="SingleLargeArchiveSearchScope"
type="t:SingleLargeArchiveSearchScopeType" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
```

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

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

Element name	Type	Description
PrimaryMailboxSearchScope	**t:PrimaryMailboxSearchScopeType** (section 3.1.4.2.3.10)	Specifies that the user's primary mailbox is searched.
LargeArchiveSearchScope	**t:LargeArchiveSearchScopeType** (section 3.1.4.2.3.8)	Search in the online archive mailbox for the user's account.
GroupSearchScope	**t:GroupSearchScopeType (**section 3.1.4.2.3.7**)**	Search groups using shortcut **MyGroups**.
CustomSearchScope	**t:CustomSearchScopeType** (section 3.1.4.2.3.3)	Specifies other locations to be searched.
SingleGroupSearchScope	**t:SingleGroupSearchScopeType** (section 3.1.4.2.3.14)	Search a single group using group identifier.
OneDriveSearchScope	**t:OneDriveSearchScopeType** (section 3.1.4.2.3.9)	Not used.
SingleLargeArchiveSearchScope	**t:SingleLargeArchiveSearchScopeType** (section 3.1.4.2.3.15)	For internal use only.

3.1.4.2.3.3 CustomSearchScopeType Complex Type

The **CustomSearchScopeType** complex type represents a specification for the location of a search in a mailbox that might not be the user's primary mailbox.

```
<xs:complexType name="CustomSearchScopeType">
  <xs:sequence>
    <xs:element name="MailboxGuid" type="t:GuidType"/>
    <xs:element name="FolderScope" type="t:SearchFolderScopeType" />
    <xs:element name="IsDeepTraversal" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

The following table lists the elements of the **CustomSearchScopeType** complex type.

Element name	Type	Description
MailboxGuid	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	Specifies the mailbox to be searched.
FolderScope	**t:SearchFolderScopeType** (section 3.1.4.2.3.11)	Specifies the folder to be searched.
IsDeepTraversal	**xs:boolean** ([XMLSCHEMA2/2])	Specifies whether the search is to descend into subfolders.

3.1.4.2.3.4 DynamicRefinerQueryType Complex Type

The **DynamicRefinerQueryType** complex type specifies a dynamic refiner that the client requests the server to calculate over, and return with, the results of a query.

```
<xs:complexType name="DynamicRefinerQueryType">
  <xs:sequence>
    <xs:element name="RefinerQuery" type="xs:string" minOccurs="1" maxOccurs="1" />
    <xs:element name="TDRefinerId" type="xs:int" minOccurs="1" maxOccurs="1" />
  </xs:sequence>
</xs:complexType>
```

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

Element name	Type	Description
RefinerQuery	**xs:string** ([XMLSCHEMA2/2])	Specifies the query syntax necessary to achieve a specific type of refinement (filtering) of the results set.
TDRefinerId	**xs:int** ([XMLSCHEMA2/2])	On generation of a batch of dynamic refiners, this uniquely identifies the refiner within the batch.

3.1.4.2.3.5 ExecuteSearch Complex Type

The **ExecuteSearch** complex type specifies a search. This complex type extends the **BaseRequestType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.17.

```
  <xs:complexType name="ExecuteSearch">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="ApplicationId" type="t:SearchApplicationIdType" minOccurs="1"
maxOccurs="1"/>
          <xs:element name="Scenario" type="xs:string" minOccurs="1" maxOccurs="1"/>
          <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
          <xs:element name="SearchScope" type="t:ArrayOfSearchScopeType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="Query" type="xs:string" minOccurs="1" maxOccurs="1" />
          <xs:element name="AnalyzedQuery" type="t:AnalyzedQuery" minOccurs="0"
maxOccurs="1"/>
          <xs:element name="ResultRowCount" type="xs:long" minOccurs="0" maxOccurs="1" />
          <xs:element name="ResultRowOffset" type="xs:long" minOccurs="0" maxOccurs="1" />
          <xs:element name="MaxResultsCountHint" type="xs:long" minOccurs="0" maxOccurs="1"
/>
          <xs:element name="MaxPreviewLength" type="xs:long" minOccurs="0" maxOccurs="1"/>
          <xs:element name="SearchRefiners" minOccurs="0" maxOccurs="1">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="SearchRefiner" type="t:DynamicRefinerQueryType"
minOccurs="0" maxOccurs="unbounded"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="RetrieveRefiners" type="xs:boolean" minOccurs="0" maxOccurs="1"
/>
          <xs:element name="MaxRefinersCountPerRefinerType" type="xs:long" minOccurs="0"
maxOccurs="1" />
          <xs:element name="IdFormat" type="t:IdFormatType" minOccurs="0" maxOccurs="1"/>
          <xs:element name="ItemTypes" type="t:ItemTypesFilterType" minOccurs="1"
maxOccurs="1" />
```

```
          <xs:element name="PropertySetName" type="t:SearchResultsPropertySetNameType"
minOccurs="0" maxOccurs="1"/>
          <xs:element name="SearchRestrictions" type="t:RestrictionType" minOccurs="0"
maxOccurs="1"/>
          <xs:element name="IncludeDeleted" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
```

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

Element name	Type	Description
ApplicationId	**t:SearchApplicationIdType** (section 3.1.4.2.4.4)	A name that identifies the calling application.
Scenario	**xs:string** ([XMLSCHEMA2/2])	An indication of the general intent of the operation, for example, "MailSearch".
SearchSessionId	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	Uniquely identifies this session. This SHOULD have been supplied to the previous **StartSearchSession** operation (section 3.1.4.4).
SearchScope	**t:ArrayOfSearchScopeType** (section 3.1.4.2.3.2)	Specifies the place(s) in which the search is to be made.
Query	**xs:string**	This specifies the text to be matched. Keyword Query Syntax (as specified in [MS-KQL]) is supported.
AnalyzedQuery	**t:AnalyzedQuery** (section 3.1.4.2.3.1)	For internal use only.
ResultRowCount	**xs:long** ([XMLSCHEMA2/2])	The maximum number of matching items (one per "row" in the set returned) to be returned from the specified offset (see **ResultRowOffset**). The protocol server can return fewer results than this if the end of the results is reached.
ResultRowOffset	**xs:long**	The offset within the results set (1 = first) from which to return the results. The protocol client can use this, in conjunction with **ResultRowCount**, to request "pages" of results from the protocol server.
MaxResultsCountHint	**xs:long**	The maximum number of results that the protocol client is willing to display.

Element name	Type	Description
		When passed with the request for the first "page", the protocol server can use this to fix the number of results that it will return for subsequent requests for results. The protocol server can use a lower count than the value provided.
MaxPreviewLength	**xs:long**	A value in the range 0 – 255 that specifies the maximum number of characters returned in the body preview property on the item found. If not specified, a value of 255 is used.
SearchRefiners	Sequence of **t:DynamicRefinerQueryType** (section 3.1.4.2.3.4)	If present, this specifies the dynamic refiners that the protocol server MUST apply to the query before returning results, if **RetrieveRefiners** is **true**.
RetrieveRefiners	**xs:boolean** ([XMLSCHEMA2/2])	A value of **true** means that the server MUST return any dynamic refiners, specified by **SearchRefiners**, in its response.
MaxRefinersCountPerRefinerType	**xs:long**	This indicates to the protocol server that it MUST NOT return more than the specified number of dynamic refiners of any type.
IdFormat	**t:IdFormatType** ([MS-OXWSCVTID] section 3.1.4.1.4.1)	The format of the id of the item returned.
ItemTypes	**t:ItemTypesFilterType** (section 3.1.4.2.4.1)	Specifies the type(s) of the items that the protocol server MUST try to match to the query.
PropertySetName	**t:SearchResultsPropertySetNameType** (section 3.1.4.2.4.5)	For internal use only.
SearchRestrictions	**t:RestrictionType** ([MS-OXWSSRCH] section 2.2.4.30)	For internal use only.
IncludeDeleted	**xs:boolean**	If **true**, search the Deleted Items folder as part of a whole mailbox search. Otherwise, omit this folder from the search.

3.1.4.2.3.6 ExecuteSearchResponseMessage Complex Type

The **ExecuteSearchResponseMessage** complex type specifies a response to a search request. This complex type extends the **ResponseMessageType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.65.

```
<xs:complexType name="ExecuteSearchResponseMessage">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType">
      <xs:sequence>
        <xs:element name="SearchResults" type="t:SearchResultsType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists the child element of the **ExecuteSearchResponseMessage** complex type.

Element name	Type	Description
SearchResults	**t:SearchResultsType** (section 3.1.4.2.3.13)	Items in scope that matched the query.

3.1.4.2.3.7 GroupSearchScopeType Complex Type

The **GroupSearchScopeType** complex type specifies a search of groups using the shortcut **MyGroups**.

```
<xs:complexType name="GroupSearchScopeType">
  <xs:sequence>
    <xs:element name="GroupTypes" type="t:SearchScopeGroupsType"/>
  </xs:sequence>
</xs:complexType>
```

The following table lists the child element of the **GroupSearchScopeType** complex type.

Element name	Type	Description
GroupTypes	**t:SearchScopeGroupsType** (section 3.1.4.2.4.7)	Specifies the value indicating the group to search for.

3.1.4.2.3.8 LargeArchiveSearchScopeType Complex Type

The **LargeArchiveSearchScopeType** complex type specifies a search in the online archive mailbox for the user's account.

```
<xs:complexType name="LargeArchiveSearchScopeType">
  <xs:sequence>
    <xs:element name="ArchiveTypes" type="t:SearchScopeArchivesType"/>
  </xs:sequence>
</xs:complexType>
```

The following table lists the child element of the **LargeArchiveSearchScopeType** complex type.

Element name	Type	Description
ArchiveTypes	**t:SearchScopeArchivesType** (section 3.1.4.2.4.6)	Specifies the archive to search.

3.1.4.2.3.9 OneDriveSearchScopeType Complex Type

The **OneDriveSearchScopeType** complex type is intended for internal use only.

```
<xs:complexType name="OneDriveSearchScopeType">
  <xs:sequence>
    <xs:element name="OneDriveView" type="t:OneDriveViewType" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

The following table lists the child element of the **OneDriveSearchScopeType** complex type.

Element name	Type	Description
OneDriveView	**t:OneDriveViewType** (section 3.1.4.2.4.2)	Specifies the OneDrive view.

3.1.4.2.3.10 PrimaryMailboxSearchScopeType Complex Type

The **PrimaryMailboxSearchScopeType** complex type represents a specification for the location of a search within a user's primary mailbox.

```
  <xs:complexType name="PrimaryMailboxSearchScopeType">
    <xs:sequence>
      <xs:element name="FolderScope" type="t:SearchFolderScopeType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="IsDeepTraversal" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
```

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

Element name	Type	Description
FolderScope	**t:SearchFolderScopeType** (section 3.1.4.2.3.11)	Specifies the folder to be searched.
IsDeepTraversal	**xs:boolean** ([XMLSCHEMA2/2])	Specifies whether the search includes subfolders.

3.1.4.2.3.11 SearchFolderScopeType Complex Type

The **SearchFolderScopeType** complex type represents the details of a specification for the location of a folder-based search.

```
<xs:complexType name="SearchFolderScopeType">
  <xs:choice>
    <xs:element name="FolderId" type="t:FolderIdType"/>
    <xs:element name="WellKnownFolder" type="t:DistinguishedFolderIdType"/>
  </xs:choice>
</xs:complexType>
```

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

Element name	Type	Description
FolderId	**t:FolderIdType** ([MS-OXWSCDATA] section 2.2.4.35)	Uniquely identifies the folder within the mailbox.
WellKnownFolder	**t:DistinguishedFolderIdType** ([MS-OXWSCDATA] section 2.2.4.27)	Identifies a "well known" folder (for example, Inbox) within the mailbox.

3.1.4.2.3.12 SearchRefinerType Complex Type

The **SearchRefinerType** complex type represents a set of refinement (filter) definitions that are to be applied to a query.

```
  <xs:complexType name="SearchRefinerType">
    <xs:sequence>
      <xs:element name="RefinerType" type="t:RefinerTypeType" minOccurs="1" maxOccurs="1"/>
      <xs:element name="Refiner" type="t:DynamicRefinerQueryType" minOccurs="1"
maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
```

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

Element name	Type	Description
RefinerType	**t:RefinerTypeType** (section 3.1.4.2.4.3)	Specifies the type of refiner represented by the **Refiner** element.
Refiner	**t:DynamicRefinerQueryType** (section 3.1.4.2.3.4)	Specifies the refinement.

3.1.4.2.3.13 SearchResultsType Complex Type

The **SearchResultsType** complex type represents a set of search results.

```
<xs:complexType name="SearchResultsType">
  <xs:sequence>
    <xs:element name="Items" minOccurs="0" maxOccurs="1">
      <xs:complexType>
        <xs:sequence>
          <xs:element name="Item" type="t:ItemType" minOccurs="0" maxOccurs="unbounded"/>
        </xs:sequence>
      </xs:complexType>
    </xs:element>
```

```
      <xs:element name="Conversations" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Conversation" type="t:ConversationType" minOccurs="0"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="People" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Persona" type="t:PersonaType" minOccurs="0"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="MoreResultsAvailable" type="xs:boolean" minOccurs="1" maxOccurs="1"
/>
      <xs:element name="RefinerTelemetryBatchId" type="xs:int" minOccurs="1" maxOccurs="1"/>
      <xs:element name="SearchRefiners" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="SearchRefiner" type="t:SearchRefinerType" minOccurs="1"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="DiagnosticsData" type="t:SearchDiagnosticsType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="SearchResultsCount" type="xs:int" minOccurs="0" maxOccurs="1" />
      <xs:element name="TotalResultsCount" type="xs:int" minOccurs="0" maxOccurs="1" />
      <xs:element name="SearchTerms" type="t:ArrayOfStringsType" minOccurs="0"
maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
```

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

Element name	Type	Description
Items	Sequence of **t:ItemType** ([MS-OXWSCORE] section 2.2.4.24)	Items that matched the query.
Conversations	Sequence of **t:ConversationType** ([MS-OXWSCONV] section 3.1.4.2.3.4)	Conversations that matched the query.
People	Sequence of **t:PersonaType** ([MS-OXWSPERS] section 2.2.4.19)	People that matched the query.
MoreResultsAvailable	**xs:boolean** ([XMLSCHEMA2/2])	**true** if more results matched the query than are contained in this set.
RefinerTelemetryBatchId	**xs:int** ([XMLSCHEMA2/2])	For internal use only.
SearchRefiners	Sequence of **t:SearchRefinerType** (section 3.1.4.2.3.12)	Dynamic refiners derived from the results.
DiagnosticsData	**t:SearchDiagnosticsType** (section 2.2.4.1)	For internal use only.
SearchResultsCount	**xs:int**	The number of search results contained in this response.
TotalResultsCount	**xs:int**	The number of search results matching the

Element name	Type	Description
		query.
SearchTerms	**t:ArrayOfStringsType** ([MS-OXWSCDATA] section 2.2.4.13)	Returns the actual terms used for the search, after word breaking and removal of any syntax-related property names. Intended for use by clients that wish to perform hit highlighting

3.1.4.2.3.14 SingleGroupSearchScopeType Complex Type

The **SingleGroupSearchScopeType** complex type identifies a single group to search, using group identifier.

```
<xs:complexType name="SingleGroupSearchScopeType">
  <xs:sequence>
    <xs:element name="GroupIdentity" type="t:UnifiedGroupIdentity"/>
  </xs:sequence>
</xs:complexType>
```

The following table lists the child element of the **SingleGroupSearchScopeType** complex type.

Element name	Type	Description
GroupIdentity	**t:UnifiedGroupIdentity** (section 3.1.4.2.3.16)	The group to search.

3.1.4.2.3.15 SingleLargeArchiveSearchScopeType Complex Type

The **SingleLargeArchiveSearchScopeType** complex type is intended for internal use only.

```
<xs:complexType name="SingleLargeArchiveSearchScopeType">
  <xs:sequence>
    <xs:element name="MailboxGuid" type="t:GuidType" minOccurs="0" maxOccurs="1"/>
    <xs:element name="FolderScope" type="t:SearchFolderScopeType"/>
    <xs:element name="IsDeepTraversal" type="xs:boolean"/>
  </xs:sequence>
</xs:complexType>
```

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

Element name	Type	Description
MailboxGuid	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	For internal use only.
FolderScope	**t:SearchFolderScopeType** (section 3.1.4.2.3.11)	For internal use only.
IsDeepTraversal	**xs:boolean** ([XMLSCHEMA2/2])	For internal use only.

3.1.4.2.3.16 UnifiedGroupIdentity Complex Type

The **UnifiedGroupIdentity** complex type identifies the group to search.

```
<xs:complexType name="UnifiedGroupIdentity">
  <xs:sequence>
    <xs:element name="Type" type="t:UnifiedGroupIdentityType" minOccurs="1" maxOccurs="1"/>
    <xs:element name="Value" type="xs:string" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

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

Element name	Type	Description
Type	**t:UnifiedGroupIdentityType** (section 3.1.4.2.4.8)	The type of the group.
Value	**xs:string** ([XMLSCHEMA2/2])	Identifies the group.

3.1.4.2.4 Simple Types

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

Simple type	Description
ItemTypesFilterType	Specifies the type of items to be searched for.
OneDriveViewType	Not used.
RefinerTypeType	Specifies the type of refinement from the search that is required
SearchApplicationIdType	For internal use only.
SearchResultsPropertySetNameType	For internal use only.
SearchScopeArchivesType	Specifies the archive to search.
SearchScopeGroupsType	For internal use only.
UnifiedGroupIdentityType	Specifies the identity type of a unified group.

3.1.4.2.4.1 ItemTypesFilterType Simple Type

The **ItemTypesFilterType** simple type describes the type(s) of items that are to be matched by a search.

```
<xs:simpleType name="ItemTypesFilterType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="MailItems"/>
```

```
            <xs:enumeration value="MailConversations"/>
            <xs:enumeration value="CalendarItems"/>
            <xs:enumeration value="People"/>
            <xs:enumeration value="OneDriveItems"/>
            <xs:enumeration value="FileItems"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:list>
    </xs:simpleType>
```

Value	Meaning
None	No refinement is required.
MailItems	Filter the search results to include only email items.
MailConversations	Filter the search results to include only mail conversation items.
CalendarItems	Filter the search results to include only calendar items.
People	Filter the search results to include only people.
OneDriveItems	Not used.
FileItems	Not used.

3.1.4.2.4.2 OneDriveViewType Simple Type

The **OneDriveViewType** simple type is not used.

```
<xs:simpleType name="OneDriveViewType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="SharedWithMe"/>
        <xs:enumeration value="MyDocuments"/>
        <xs:enumeration value="RecycleBin"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

Value	Meaning
None	Not used.
SharedWithMe	Not used.
MyDocuments	Not used.
RecycleBin	Not used.

3.1.4.2.4.3 RefinerTypeType Simple Type

The **RefinerTypeType** simple type represents the type of refinement of the search that is required.

```
<xs:simpleType name="RefinerTypeType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="To"/>
    <xs:enumeration value="From"/>
    <xs:enumeration value="Folder"/>
    <xs:enumeration value="HasAttachment"/>
    <xs:enumeration value="MailboxSource"/>
  </xs:restriction>
</xs:simpleType>
```

Value	Meaning
None	No refinement is required.
To	Refine according to the recipient of the item.
From	Refine according to the originator of the item.
Folder	Refine according to the folder in which the item is located.
HasAttachment	Refine according to whether the item has at least one attachment, or not.
MailboxSource	Refine according to the mailbox in which the item is located.

3.1.4.2.4.4 SearchApplicationIdType Simple Type

The **SearchApplicationIdType** simple type is intended for internal use only.

```
<xs:simpleType name="SearchApplicationIdType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Outlook"/>
    <xs:enumeration value="Owa"/>
    <xs:enumeration value="Paw"/>
    <xs:enumeration value="Teamspace"/>
    <xs:enumeration value="OneDrive"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>
```

Value	Meaning
Outlook	For internal use only.
Owa	For internal use only.
Paw	For internal use only.
Teamspace	For internal use only.
OneDrive	For internal use only.
Other	For internal use only.

3.1.4.2.4.5 SearchResultsPropertySetNameType Simple Type

The **SearchResultsPropertySetNameType** simple type is intended for internal use only.

```
<xs:simpleType name="SearchResultsPropertySetNameType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Default"/>
    <xs:enumeration value="Owa16"/>
    <xs:enumeration value="Outlook16"/>
  </xs:restriction>
</xs:simpleType>
```

Value	Description
Default	For internal use only.
Owa16	For internal use only.
Outlook16	For internal use only.

3.1.4.2.4.6 SearchScopeArchivesType Simple Type

The **SearchScopeArchivesType** simple type specifies the archive mailbox to search.

```
<xs:simpleType name="SearchScopeArchivesType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="MainArchive"/>
        <xs:enumeration value="AuxArchive"/>
        <xs:enumeration value="All"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

Value	Meaning
MainArchive	The main archive mailbox.
AuxArchive	For internal use only.
All	All archive mailboxes.

3.1.4.2.4.7 SearchScopeGroupsType Simple Type

The **SearchScopeGroupsType** simple type is intended for internal use only.

```
<xs:simpleType name="SearchScopeGroupsType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="MyGroups"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

Value	Meaning
MyGroups	For internal use only.

3.1.4.2.4.8 UnifiedGroupIdentityType Simple Type

The **UnifiedGroupIdentityType** simple type specifies the identity type of a unified group.

```
<xs:simpleType name="UnifiedGroupIdentityType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="SmtpAddress"/>
    <xs:enumeration value="LegacyDn"/>
    <xs:enumeration value="ExternalDirectoryObjectId"/>
  </xs:restriction>
</xs:simpleType>
```

Value	Meaning
SmtpAddress	The **SMTP** address of the group.
LegacyDn	The legacy name of the group.
ExternalDirectoryObjectId	The external directory object id.

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 GetSearchSuggestions Operation

The **GetSearchSuggestions** operation is a request for possible query strings, matching the provided (possibly fragmentary) input.

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

```
<wsdl:operation name="GetSearchSuggestions">
  <wsdl:input message="tns:GetSearchSuggestionsSoapIn" />
  <wsdl:output message="tns:GetSearchSuggestionsSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification of the operation.

```
<wsdl:operation name="GetSearchSuggestions">
  <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetSearchSuggestions
" />
  <wsdl:input>
    <soap:header message="tns:GetSearchSuggestionsSoapIn" part="RequestVersion"
use="literal"/>
    <soap:header message="tns:GetSearchSuggestionsSoapIn" part="MailboxCulture"
use="literal"/>
    <soap:body parts="request" use="literal" />
  </wsdl:input>
  <wsdl:output>
    <soap:body parts="GetSearchSuggestionsResult" use="literal" />
    <soap:header message="tns:GetSearchSuggestionsSoapOut" part="ServerVersion"
use="literal"/>
  </wsdl:output>
</wsdl:operation>
```

3.1.4.3.1 Messages

The following table lists the WSDL message definitions that are specific to this operation.

Message	Description
GetSearchSuggestionsSoapIn	Specifies the SOAP message that requests search suggestions.
GetSearchSuggestionsSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.3.1.1 GetSearchSuggestionsSoapIn Message

The **GetSearchSuggestionsSoapIn** WSDL message requests that the server provide search suggestions based on some (possibly fragmentary) input.

```
<wsdl:message name="GetSearchSuggestionsSoapIn">
  <wsdl:part name="request" element="tns:GetSearchSuggestions"/>
  <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **GetSearchSuggestionsSoapIn** WSDL message is the input messages for the **GetSearchSuggestions** operation (section 3.1.4.3).

The parts of the **GetSearchSuggestionsSoapIn** WSDL message are described in the following table.

Part	Element/type	Description
request	**tns:GetSearchSuggestions** (section 3.1.4.3.2.1)	Specifies the **SOAP body** of the request.
MailboxCulture	**t:MailboxCulture** ([MS-OXWSCDATA] section 2.2.3.6)	Specifies a **SOAP header** that identifies the culture to use for accessing the **mailbox**. The cultures are defined by [RFC3066].
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.3.9)	Specifies a SOAP header that identifies the schema version for the **GetSearchSuggestions** operation request.

3.1.4.3.1.2 GetSearchSuggestionsSoapOut Message

The **GetSearchSuggestionsSoapOut** WSDL message specifies the server response to the **GetSearchSuggestions** operation (section 3.1.4.3) to request search suggestions.

```
<wsdl:message name="GetSearchSuggestionsSoapOut">
  <wsdl:part name="GetSearchSuggestionsResult" element="tns:GetSearchSuggestionsResponse"/>
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **GetSearchSuggestionsSoapOut** message is the output message for the **GetSearchSuggestions** operation.

The parts of the **GetSearchSuggestionsSoapOut** WSDL message are described in the following table.

Part	Element/type	Description
GetSearchSuggestionsResult	**tns:GetSearchSuggestionsResponse** (section 3.1.4.3.2.2)	Specifies the **SOAP body** of the response message to a **GetSearchSuggestions** operation request.
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.3.10)	Specifies a **SOAP header** that identifies the server version for the response.

If the request is successful, the **GetSearchSuggestions** operation returns a **GetSearchSuggestionsResponse** element with the **ResponseClass** attribute of the **GetSearchSuggestionsResponse** element set to "Success". The **ResponseCode** element of the **GetSearchSuggestionsResponse** element is set to "NoError".

3.1.4.3.2 Elements

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

Element	Description
GetSearchSuggestions	Requests search suggestions.
GetSearchSuggestionsResponse	Specifies the response body from a request for search suggestions.

3.1.4.3.2.1 tns:GetSearchSuggestions Element

The **GetSearchSuggestions** element specifies the base element for a **GetSearchSuggestions** operation (section 3.1.4.3) request.

```
<xs:element name="GetSearchSuggestions" type="m:GetSearchSuggestions"/>
```

3.1.4.3.2.2 tns:GetSearchSuggestionsResponse Element

The **GetSearchSuggestionsResponse** element specifies the response message for a **GetSearchSuggestions** operation (section 3.1.4.3).

```
<xs:element name="GetSearchSuggestionsResponse"
type="m:GetSearchSuggestionsResponseMessage"/>
```

3.1.4.3.3 Complex Types

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

Complex type	Description
GetSearchSuggestions	Specifies the parameters required to request search suggestions.
GetSearchSuggestionsResponseMessage	Specifies the response from a request for search suggestions.
SuggestionType	A generic, single search suggestion.
PeopleSuggestionType	A single people search suggestion.
SearchSuggestionsType	A collection of search suggestions.

3.1.4.3.3.1 GetSearchSuggestions Complex Type

The **GetSearchSuggestions** complex type specifies a request for search suggestions. This complex type extends the **BaseRequestType** complex type, as specified by .[MS-OXWSCDATA] section 2.2.4.17

```
<xs:complexType name="GetSearchSuggestions">
  <xs:complexContent>
    <xs:extension base="m:BaseRequestType">
      <xs:sequence>
        <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
        <xs:element name="Query" type="xs:string" minOccurs="0" maxOccurs="1" />
        <xs:element name="SuggestionTypes" type="t:SuggestionKindType" minOccurs="0"
maxOccurs="1" />
        <xs:element name="SuggestionsPrimer" type="xs:boolean" minOccurs="0"
maxOccurs="1"/>
        <xs:element name="MaxSuggestionsCountPerSuggestionType" type="xs:long"
minOccurs="0" maxOccurs="1" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SearchSessionId	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	Uniquely identifies this session. This SHOULD have been supplied to the **StartSearchSession** operation (section 3.1.4.4).
Query	**xs:string** ([XMLSCHEMA2/2])	A query, or query fragment: typically, the text that a user has entered as the search term(s). The server MUST try to match this against its available data sources, and return matching queries. The client can omit this, in which case the server will generate suggestions based on criteria other than string matching (for example, most recent queries).
SuggestionTypes	**t:SuggestionKindType** (section 2.2.5.1)	The type(s) of suggestions that are desired.
SuggestionsPrimer	**xs:boolean** ([XMLSCHEMA2/2])	For internal use only.
MaxSuggestionsCountPerSuggestionType	**xs:long** ([XMLSCHEMA2/2])	The greatest number of suggestions of any type (specified in the **SuggestionTypes** element) that the client wishes to receive. The server MUST NOT return more suggestions of any given type.

3.1.4.3.3.2 GetSearchSuggestionsResponseMessage Complex Type

The **GetSearchSuggestionsResponseMessage** complex type extends the **ResponseMessageType** complex type. This complex type extends the **ResponseMessageType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.65.

```
<xs:complexType name="GetSearchSuggestionsResponseMessage">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType">
      <xs:sequence>
        <xs:element name="SearchSuggestions" type="t:SearchSuggestionsType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists the child elements of the **GetSearchSuggestionsResponseMessage** type.

Element	Type	Description
SearchSuggestions	**t:SearchSuggestionsType** (section 3.1.4.3.3.4)	Search suggestions matching the query (fragment) provided in the **GetSearchSuggestions** operation (section 3.1.4.3).

3.1.4.3.3.3 PeopleSuggestionType Complex Type

The **PeopleSuggestionType** complex type represents a query suggestion that also identifies a mail-enabled person or group. It is an extension of the base **SuggestionType** complex type (section 3.1.4.3.3.5).

```
  <xs:complexType name="PeopleSuggestionType">
    <xs:complexContent>
      <xs:extension base="t:SuggestionType">
        <xs:sequence>
          <xs:element name="PrimarySmtpAddress" type="xs:string" minOccurs="1"
maxOccurs="1"/>
          <xs:element name="PersonType" type="xs:string" minOccurs="0" maxOccurs="1"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
```

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

Element	Type	Description
PrimarySmtpAddress	**xs:string** ([XMLSCHEMA2/2])	The email address of the suggested person or group.
PersonType	**xs:string**	Describes the type of suggestion in more detail. One of the following: ▪ "Unknown" ▪ "Person" ▪ "DistributionList" ▪ "Room" ▪ "Place" ▪ "ModernGroup"

3.1.4.3.3.4 SearchSuggestionsType Complex Type

The **SearchSuggestionsType** complex type represents a batch of query suggestions. The server can generate zero, one, or multiple suggestions in response to a **GetSearchSuggestions** operation (section 3.1.4.3), depending on the string to be matched and the contents of its suggestion data sources.

```
  <xs:complexType name="SearchSuggestionsType">
    <xs:sequence>
      <xs:element name="TDSuggestionsBatchId" type="xs:long" minOccurs="1" maxOccurs="1"/>
      <xs:element name="TDSuggestionsInstanceId" type="t:GuidType" minOccurs="1"
maxOccurs="1"/>
      <xs:element name="Suggestions" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Suggestion" type="t:SuggestionType" minOccurs="0"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="DiagnosticsData" type="t:SearchDiagnosticsType" minOccurs="0"
maxOccurs="1" />
    </xs:sequence>
```

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

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

Element	Type	Description
TDSuggestionsBatchId	**xs:long** ([XMLSCHEMA2/2])	This identifies the batch of suggestions uniquely as an instance (see the **TDSuggestionsInstanceId** element). Servers MUST number the batches such that the identities increase monotonically through the batch.
TDSuggestionsInstanceId	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	This identifies a set of batches of suggestions corresponding to a single search session. If the client invoked the **StartSearchSession** operation (section 3.1.4.4) and provided a search session identifier, the server MUST use this. Otherwise, the server MUST generate a unique identifier that can be used for correlation, in the same way.
Suggestions	Sequence of **t:SuggestionType** (section 3.1.4.3.3.5)	If present, this carries the suggestion(s) in the batch, one per element contained.
DiagnosticsData	**t:SearchDiagnosticsType** (section 2.2.4.1)	For internal use only.

3.1.4.3.3.5 SuggestionType Complex Type

The **SuggestionType** complex type represents a query suggestion.

```
  <xs:complexType name="SuggestionType">
    <xs:sequence>
      <xs:element name="SuggestedQuery" type="xs:string" minOccurs="1" maxOccurs="1"/>
      <xs:element name="DisplayText" type="xs:string" minOccurs="1" maxOccurs="1"/>
      <xs:element name="SuggestionType" type="t:SuggestionKindType" minOccurs="1"
maxOccurs="1"/>
      <xs:element name="Trigger" type="xs:string" minOccurs="0" maxOccurs="1"/>
      <xs:element name="TDSuggestionId" type="xs:int"/>
      <xs:element name="IsDeletable" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
```

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

Element	Type	Description
SuggestedQuery	**xs:string** ([XMLSCHEMA2/2])	The suggested query, which can be used as the **Query** element of the **ExecuteSearch** operation (section 3.1.4.2).
DisplayText	**xs:string**	A form of the suggested query that is suitable for display to the user. This value can be the same as the value of the **SuggestedQuery** element. This is not supposed to be used as the **Query** element of the **ExecuteSearch** operation.
SuggestionType	**t:SuggestionKindType** (section 2.2.5.1)	The type of the suggestion. This MUST be compatible with the **SuggestionTypes** specified in the **GetSearchSuggestions** operation (section 3.1.4.3).

Element	Type	Description
Trigger	**xs:string**	The query (or fragment) that elicited this suggestion.
TDSuggestionId	**xs:int** ([XMLSCHEMA2/2])	This identifies the suggestion uniquely within the batch of suggestions returned in the **GetSearchSuggestionsResponseMessage** response (section 3.1.4.3.2.2). Servers MUST arrange the suggestions such that the identities increase monotonically through the batch. Clients SHOULD display suggestions in this order.
IsDeletable	**xs:boolean** ([XMLSCHEMA2/2])	For internal use only.

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 StartSearchSession Operation

This **StartSearchSession** operation is a request to begin a search session. The protocol client indicates that the server SHOULD expect that other requests (including queries) will follow. This information can be used by the protocol server to perform important optimizations such as cache warming.

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

```
<wsdl:operation name="StartSearchSession">
  <wsdl:input message="tns:StartSearchSessionSoapIn" />
  <wsdl:output message="tns:StartSearchSessionSoapOut" />
</wsdl:operation>
```

The following is the WSDL binding specification of the operation.

```
<wsdl:operation name="StartSearchSession">
  <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/StartSearchSession"
/>
  <wsdl:input>
    <soap:header message="tns:StartSearchSessionSoapIn" part="RequestVersion"
use="literal"/>
    <soap:header message="tns:StartSearchSessionSoapIn" part="MailboxCulture"
use="literal"/>
    <soap:body parts="request" use="literal" />
  </wsdl:input>
```

```
      <wsdl:output>
        <soap:body parts="StartSearchSessionResult" use="literal" />
        <soap:header message="tns:StartSearchSessionSoapOut" part="ServerVersion"
use="literal"/>
      </wsdl:output>
    </wsdl:operation>
```

3.1.4.4.1 Messages

The following table lists the WSDL message definitions that are specific to this operation.

Message	Description
StartSearchSessionSoapIn	Specifies the SOAP message that defines the search session.
StartSearchSessionSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.4.1.1 StartSearchSessionSoapIn Message

The **StartSearchSessionSoapIn** WSDL message specifies the options that are to be applied by the protocol server to the search session.

```
<wsdl:message name="StartSearchSessionSoapIn">
  <wsdl:part name="request" element="tns:StartSearchSession"/>
  <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
  <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
</wsdl:message>
```

The **StartSearchSessionSoapIn** WSDL message is the input message for the **StartSearchSession** operation (section 3.1.4.4).

The parts of the **StartSearchSessionSoapIn** WSDL message are described in the following table.

Part	Element/type	Description
request	**tns:StartSearchSession** (section 3.1.4.4.2.1)	Specifies the **SOAP body** of the request.
MailboxCulture	**t:MailboxCulture** ([MS-OXWSCDATA] section 2.2.3.6)	Specifies a **SOAP header** that identifies the culture to use for accessing the **mailbox**. The cultures are defined by [RFC3066].
RequestVersion	**t:RequestServerVersion** ([MS-OXWSCDATA] section 2.2.3.9)	Specifies a SOAP header that identifies the schema version for the **StartSearchSession** operation request.

3.1.4.4.1.2 StartSearchSessionSoapOut Message

The **StartSearchSessionSoapOut** WSDL message specifies the server response to the **StartSearchSession** operation (section 3.1.4.4) to create a search session.

```
<wsdl:message name="StartSearchSessionSoapOut">
  <wsdl:part name="StartSearchSessionResult" element="tns:StartSearchSessionResponse"/>
```

```
  <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **StartSearchSessionSoapOut** WSDL message is the output message for the **StartSearchSession** operation.

The parts of the **StartSearchSessionSoapOut** WSDL message are described in the following table.

Part	Element/type	Description
StartSearchSessionResult	**tns:StartSearchSessionResponse** (section 3.1.4.4.2.2)	Specifies the **SOAP body** of the response message to a **StartSearchSession** operation request.
ServerVersion	**t:ServerVersionInfo** ([MS-OXWSCDATA] section 2.2.3.10)	Specifies a **SOAP header** that identifies the server version for the response.

If the request is successful, the **StartSearchSession** operation returns a **StartSearchSessionResponse** element with the **ResponseClass** attribute of the **StartSearchSessionResponseMessage** element set to "Success". The **ResponseCode** element of the **StartSearchSessionResponseMessage** element is set to "NoError".

3.1.4.4.2 Elements

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

Element	Description
StartSearchSession	Specifies the options required to create a search session.
StartSearchSessionResponse	Specifies the response body from a request to create a search session.

3.1.4.4.2.1 tns:StartSearchSession Element

The **StartSearchSession** element specifies the base element for a **StartSearchSession** operation (section 3.1.4.4) request.

```
<xs:element name="StartSearchSession" type="m:StartSearchSession"/>
```

3.1.4.4.2.2 tns:StartSearchSessionResponse Element

The **StartSearchSessionResponse** element specifies the response message for a **StartSearchSession** operation (section 3.1.4.4).

```
  <xs:element name="StartSearchSessionResponse"
type="m:StartSearchSessionResponseMessage"/>
```

3.1.4.4.3 Complex Types

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

Complex type	Description
StartSearchSession	Specifies the options required to create a search session.
StartSearchSessionResponseMessage	Specifies the response from a request to create a search session.

3.1.4.4.3.1 StartSearchSession Complex Type

The **StartSearchSession** complex type specifies a request to start a search session. The protocol client indicates to the server that it SHOULD expect that other search-related requests will follow. This can be used by the protocol server to perform important optimizations such as cache warming.

This complex type extends the **BaseRequestType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.17.

```
  <xs:complexType name="StartSearchSession">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
          <xs:element name="WarmupOptions" type="t:WarmupOptionsType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="SuggestionTypes" type="t:SuggestionKindType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="SearchScope" type="t:ArrayOfSearchScopeType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="IdFormat" type="t:IdFormatType" minOccurs="0" maxOccurs="1" />
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
```

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

Element	Type	Description
SearchSessionId	**t:GuidType** ([MS-OXWSXPROP] section 2.1.7)	Uniquely identifies this session.
WarmupOptions	**t:WarmupOptionsType** (section 3.1.4.4.4.1)	Specifies the type(s) of warm-up that are appropriate. The appropriate value will depend on the protocol client's requirements and its anticipated subsequent use of the protocol.
SuggestionTypes	**t:SuggestionKindType** (section 2.2.5.1)	Specifies the type(s) of query suggestions that can be requested later in the session.
SearchScope	**t:ArrayOfSearchScopeType** (section 3.1.4.2.3.2)	Specifies the scope(s) of items that subsequent searches in the session will try to match.
IdFormat	**t:IdFormatType** ([MS-OXWSCVTID] section 3.1.4.1.4.1)	Specifies the format in which the identifiers of matched items will be returned. If not specified, a value of "EwsId" will be used.

3.1.4.4.3.2 StartSearchSessionResponseMessage Complex Type

The **StartSearchSessionResponseMessage** complex type extends the **ResponseMessageType** complex type. This complex type extends the **ResponseMessageType** complex type, as specified by [MS-OXWSCDATA] section 2.2.4.65.

```
<xs:complexType name="StartSearchSessionResponseMessage">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType">
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

3.1.4.4.4 Simple Types

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

Simple type	Description
WarmupOptionsType	Specifies the kind(s) of warm up that the protocol server SHOULD perform when creating a search session. "Warming up" refers to initialization procedures that the protocol server can take on its data structures to optimize the speed of its response to subsequent requests.

3.1.4.4.4.1 WarmupOptionsType Simple Type

The **WarmupOptionsType** simple type specifies the kind(s) of warm up that the protocol server SHOULD perform when creating a search session in the **StartSearchSession** operation.

```
<xs:simpleType name="WarmupOptionsType">
  <xs:list>
    <xs:simpleType>
    <xs:restriction base="xs:string">
      <xs:enumeration value="None"/>
      <xs:enumeration value="Suggestions"/>
      <xs:enumeration value="Results"/>
      <xs:enumeration value="All"/>
    </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

Value	Meaning
None	No warm-up is required.
Suggestions	Search suggestions data structures SHOULD be warmed up.
Results	Query results data structures SHOULD be warmed up.
All	All types of warm up SHOULD be performed.

3.1.4.4.5 Attributes

None.

3.1.4.4.6 Groups

None.

3.1.4.4.7 Attribute Groups

None.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

The following examples illustrate the usage of the protocol. The recommended pattern of usage is to perform the following operations in this order:

1. Create a search session
2. Get Suggestions for Searches (optional)
3. Search
4. End the search session

Operations 2 and 3 can be repeated multiple times within a search session.

4.1 Create a Search Session

The most natural time for a protocol client to create a search session is when the user indicates that they wish to search. They might do this, for example, by clicking on an element in the user interface, such as an edit control into which they will type their query.

In this example, the protocol client constructs the following WSDL message:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <RequestServerVersion Version="Exchange2015"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"/>
    <MailboxCulture xmlns="http://schemas.microsoft.com/exchange/services/2006/types">en-
US</MailboxCulture>
  </s:Header>
  <s:Body>
    <StartSearchSession xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <SearchSessionId>{5DEA5CFC-0515-4BA1-AF60-5550178C7D14}</SearchSessionId>
      <WarmupOptions>All</WarmupOptions>
      <SuggestionTypes>Keywords</SuggestionTypes>
      <SearchScope>
        <PrimaryMailboxSearchScope
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <IsDeepTraversal>true</IsDeepTraversal>
        </PrimaryMailboxSearchScope>
      </SearchScope>
      <IdFormat>HexEntryId</IdFormat>
    </StartSearchSession>
  </s:Body>
</s:Envelope>
```

The following example shows a successful **StartSearchSession** response.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <h:ServerVersionInfo MajorVersion="15" MinorVersion="1" MajorBuildNumber="1362"
MinorBuildNumber="8" Version="V2017_07_11"
xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"/>
  </s:Header>
  <s:Body>
    <StartSearchSessionResponse ResponseClass="Success"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages"
```

```
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
      <ResponseCode>NoError</ResponseCode>
    </StartSearchSessionResponse>
  </s:Body>
</s:Envelope>
```

4.2 Get Suggestions for Searches

Search suggestions are intended to make it easier for users to search, by providing completions of partially typed queries. The protocol client is responsible for displaying such suggestions to the user, and for using the suggestion to build a query string (and possibly execute it).

4.2.1 Suggestions without User Input

The most natural time for a protocol client to request search suggestions without user input is immediately after creating a search session (section 4.1), and before the user has started typing a query themselves.

In this example, the protocol client constructs the following WSDL message:

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <RequestServerVersion Version="Exchange2015"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"/>
    <MailboxCulture xmlns="http://schemas.microsoft.com/exchange/services/2006/types">en-
US</MailboxCulture>
  </s:Header>
  <s:Body>
    <GetSearchSuggestions
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <SearchSessionId>{5DEA5CFC-0515-4BA1-AF60-5550178C7D14}</SearchSessionId>
      <Query/>
      <SuggestionTypes>Keywords</SuggestionTypes>
      <MaxSuggestionsCountPerSuggestionType>6</MaxSuggestionsCountPerSuggestionType>
    </GetSearchSuggestions>
  </s:Body>
</s:Envelope>
```

The following example shows a successful **GetSearchSuggestions** response.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <h:ServerVersionInfo MajorVersion="15" MinorVersion="1" MajorBuildNumber="1362"
MinorBuildNumber="8" Version="V2017_07_11"
xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"/>
  </s:Header>
  <s:Body>
    <GetSearchSuggestionsResponse ResponseClass="Success"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
      <ResponseCode>NoError</ResponseCode>
      <SearchSuggestions>
        <TDSuggestionsBatchId
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">1</TDSuggestionsBatchId>
        <TDSuggestionsInstanceId
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">90c3aa53-9de8-40b2-a7b0-
bfea12ca20c9</TDSuggestionsInstanceId>
```

```
        <Suggestions xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <Suggestion>
            <SuggestedQuery>test</SuggestedQuery>
            <DisplayText>test</DisplayText>
            <SuggestionType>Keywords</SuggestionType>
            <Trigger/>
            <TDSuggestionId>1</TDSuggestionId>
          </Suggestion>
          <Suggestion>
            <SuggestedQuery>tests</SuggestedQuery>
            <DisplayText>tests</DisplayText>
            <SuggestionType>Keywords</SuggestionType>
            <Trigger/>
            <TDSuggestionId>2</TDSuggestionId>
          </Suggestion>
        </Suggestions>
      </SearchSuggestions>
    </GetSearchSuggestionsResponse>
  </s:Body>
</s:Envelope>
```

4.2.2 Suggestions with User Input

Once the search session has been established and the user begins to type a query, the protocol client can request search suggestions, as new input is provided.

In this example, the protocol client constructs the following WSDL message:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <RequestServerVersion Version="Exchange2015"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"/>
    <MailboxCulture xmlns="http://schemas.microsoft.com/exchange/services/2006/types">en-
US</MailboxCulture>
  </s:Header>
  <s:Body>
    <GetSearchSuggestions
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <SearchSessionId>{5DEA5CFC-0515-4BA1-AF60-5550178C7D14}</SearchSessionId>
      <Query>test</Query>
      <SuggestionTypes>Keywords</SuggestionTypes>
      <MaxSuggestionsCountPerSuggestionType>6</MaxSuggestionsCountPerSuggestionType>
    </GetSearchSuggestions>
  </s:Body>
</s:Envelope>
```

The following example shows a successful **GetSearchSuggestions** response.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <h:ServerVersionInfo MajorVersion="15" MinorVersion="1" MajorBuildNumber="1362"
MinorBuildNumber="8" Version="V2017_07_11"
xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"/>
  </s:Header>
  <s:Body>
    <GetSearchSuggestionsResponse ResponseClass="Success"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
```

```
      <ResponseCode>NoError</ResponseCode>
      <SearchSuggestions>
        <TDSuggestionsBatchId
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">4</TDSuggestionsBatchId>
        <TDSuggestionsInstanceId
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">90cc7d58-3e7d-4afa-9a67-
cb93727b96e5</TDSuggestionsInstanceId>
        <Suggestions xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <Suggestion>
            <SuggestedQuery>tester</SuggestedQuery>
            <DisplayText>tester</DisplayText>
            <SuggestionType>Keywords</SuggestionType>
            <Trigger>test</Trigger>
            <TDSuggestionId>1</TDSuggestionId>
          </Suggestion>
          <Suggestion>
            <SuggestedQuery>tests</SuggestedQuery>
            <DisplayText>tests</DisplayText>
            <SuggestionType>Keywords</SuggestionType>
            <Trigger>test</Trigger>
            <TDSuggestionId>2</TDSuggestionId>
          </Suggestion>
          <Suggestion>
            <SuggestedQuery>tested</SuggestedQuery>
            <DisplayText>tested</DisplayText>
            <SuggestionType>Keywords</SuggestionType>
            <Trigger>test</Trigger>
            <TDSuggestionId>3</TDSuggestionId>
          </Suggestion>
          <Suggestion>
            <SuggestedQuery>testing</SuggestedQuery>
            <DisplayText>testing</DisplayText>
            <SuggestionType>Keywords</SuggestionType>
            <Trigger>test</Trigger>
            <TDSuggestionId>4</TDSuggestionId>
          </Suggestion>
        </Suggestions>
      </SearchSuggestions>
    </GetSearchSuggestionsResponse>
  </s:Body>

</s:Envelope>
```

4.3 Search

Once a query string has been obtained, either from user input or from a suggestion (section 4.2), the protocol client initiates the search operation, and waits for the response.

In this example, the protocol client constructs the following WSDL message:

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <RequestServerVersion Version="V2016_01_06"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"/>
    <MailboxCulture xmlns="http://schemas.microsoft.com/exchange/services/2006/types">en-
US</MailboxCulture>
  </s:Header>
  <s:Body>
    <ExecuteSearch xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <ApplicationId>Outlook</ApplicationId>
      <Scenario>MailSearch</Scenario>
      <SearchSessionId>{5DEA5CFC-0515-4BA1-AF60-5550178C7D14}</SearchSessionId>
      <SearchScope>
```

```
        <PrimaryMailboxSearchScope
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <IsDeepTraversal>true</IsDeepTraversal>
        </PrimaryMailboxSearchScope>
      </SearchScope>
      <Query>test</Query>
      <ResultRowCount>25</ResultRowCount>
      <MaxResultsCountHint>-1</MaxResultsCountHint>
      <IdFormat>HexEntryId</IdFormat>
      <ItemTypes>MailItems</ItemTypes>
    </ExecuteSearch>
  </s:Body>
</s:Envelope>
```

The following example shows a successful **ExecuteSearch** response.

```
<?xml version="1.0" encoding="utf-8"?>
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <h:ServerVersionInfo MajorVersion="15" MinorVersion="1" MajorBuildNumber="1362"
MinorBuildNumber="8" Version="V2017_07_11"
xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance"/>
  </s:Header>
  <s:Body>
    <ExecuteSearchResponse ResponseClass="Success"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
instance">
      <ResponseCode>NoError</ResponseCode>
      <SearchResults>
        <Items xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <Item xsi:type="Message">
            <ItemId
Id="00000000BB32AF9FA3F10041A7EE5C543B1766F30700377AC501447DC646BFC441846246FD650000008577E00
000FA7DD15124302A47BAB31B0F81344E0D0000486367920000"/>
            <ParentFolderId
Id="00000000BB32AF9FA1F10041A8EE5C543B1766F30100377AC501447DC646BFC441846246FD650000008577E00
000"/>
            <ItemClass>IPM.Note</ItemClass>
            <Subject>Test Report</Subject>
            <Sensitivity>Normal</Sensitivity>
            <DateTimeReceived>2017-01-02T19:45:30+08:00</DateTimeReceived>
            <Size>126208</Size>
            <Importance>Normal</Importance>
            <IsDraft>false</IsDraft>
            <DateTimeSent>2017-01-02T19:45:22+08:00</DateTimeSent>
            <DateTimeCreated>2017-01-02T19:45:30+08:00</DateTimeCreated>
            <DisplayCc/>
            <DisplayTo>bob</DisplayTo>
            <HasAttachments>false</HasAttachments>
            <ExtendedProperty>
              <ExtendedFieldURI PropertyTag="0xf03" PropertyType="Binary"/>
              <Value>hBJvPz81akq1p0l1ohxXUw==</Value>
            </ExtendedProperty>
            <ExtendedProperty>
              <ExtendedFieldURI DistinguishedPropertySetId="Common" PropertyId="34064"
PropertyType="Integer"/>
              <Value>0</Value>
            </ExtendedProperty>
            <ExtendedProperty>
              <ExtendedFieldURI DistinguishedPropertySetId="Common" PropertyId="3613"
PropertyType="String"/>
              <Value>Test Report</Value>
            </ExtendedProperty>
            <LastModifiedTime>2017-01-02T19:45:30+08:00</LastModifiedTime>
```

```
            <ConversationId Id="D339781C529843669D77C2C83C75DF2A"/>
            <Preview>
              Test Report
            </Preview>
            <IconIndex>Default</IconIndex>
            <SearchKey>bvZ/krKkPUWsnKVNYbnPDg==</SearchKey>
            <SortKey>636377895308298999</SortKey>
            <Sender>
              <Mailbox>
                <Name>alice</Name>
                <EmailAddress>alice@contoso.com</EmailAddress>
                <RoutingType>EX</RoutingType>
              </Mailbox>
            </Sender>

<ConversationIndex>AdMQMSuY0zl4HFKYQ2add8LIPHXfKgACjNogAAAJeHA=</ConversationIndex>
            <ConversationTopic>Test Report</ConversationTopic>
            <From>
              <Mailbox>
                <Name>alice</Name>
                <EmailAddress>alice@contoso.com</EmailAddress>
                <RoutingType>EX</RoutingType>
              </Mailbox>
            </From>
            <IsRead>true</IsRead>
            <SenderSMTPAddress>alice@contoso.com</SenderSMTPAddress>
            <MailboxGuids>
              <MailboxGuid>db3ed717-3ed4-4d96-8934-1490528c0d49</MailboxGuid>
            </MailboxGuids>
          </Item>
        </Items>
        <MoreResultsAvailable
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">true</MoreResultsAvailable>
        <SearchResultsCount
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">1</SearchResultsCount>
        <TotalResultsCount
xmlns="http://schemas.microsoft.com/exchange/services/2006/types">1</TotalResultsCount>
        <SearchTerms xmlns="http://schemas.microsoft.com/exchange/services/2006/types">
          <SearchTerm>test</SearchTerm>
        </SearchTerms>
      </SearchResults>
    </ExecuteSearchResponse>
  </s:Body>
</s:Envelope>
```

4.4 End a Search Session

The most natural time for a protocol client to end a search session is when the user indicates that they no longer wish to search. The mechanisms for doing so will vary, according to the user interface.

In this example, the protocol client constructs the following WSDL message:

```
<?xml version="1.0" encoding="utf-8"?>

  <s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Header>
      <RequestServerVersion Version="Exchange2015"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"/>
      <MailboxCulture xmlns="http://schemas.microsoft.com/exchange/services/2006/types">en-
US</MailboxCulture>
    </s:Header>
    <s:Body>
      <EndSearchSession xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
        <SearchSessionId>{5DEA5CFC-0515-4BA1-AF60-5550178C7D14}</SearchSessionId>
      </EndSearchSession>
```

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

The following example shows a successful **EndSearchSession** response.

```
<?xml version="1.0" encoding="utf-8"?>

  <s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
    <s:Header>
      <h:ServerVersionInfo MajorVersion="15" MinorVersion="1" MajorBuildNumber="1362"
  MinorBuildNumber="8" Version="V2017_07_11"
  xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
  instance"/>
    </s:Header>
    <s:Body>
      <EndSearchSessionResponse ResponseClass="Success"
  xmlns="http://schemas.microsoft.com/exchange/services/2006/messages"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema" xmlns:xsi="http://www.w3.org/2001/XMLSchema-
  instance">
        <ResponseCode>NoError</ResponseCode>
      </EndSearchSessionResponse>
    </s:Body>
  </s:Envelope>
```

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Full WSDL

The XML files that are listed in the following table are required in order to implement the functionality specified in this document.

File name	Description	Section
MS-OXWSOLPS.wsdl	Contains the WSDL for the implementation of this protocol.	6
MS-OXWSOLPS-messages.xsd	Contains the XML schema message definitions that are used in this protocol.	7.1
MS-OXWSOLPS-types.xsd	Contains the XML schema type definitions that are used in this protocol.	7.2

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSOLPS-types.xsd or MS-OXWSOLPS-messages.xsd schemas have to be placed in the common folder along with the files.

This section contains the contents of the MS-OXWSOLPS.wsdl file.

```
<?xml version="1.0" encoding="utf-8"?>
<wsdl:definitions xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
xmlns:tns="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:wsdl="http://schemas.xmlsoap.org/wsdl/"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
     <wsdl:types>
          <xs:schema id="messages" elementFormDefault="qualified" version="Exchange2016"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages">
               <xs:include schemaLocation="MS-OXWSOLPS-messages.xsd"/>
          </xs:schema>
     </wsdl:types>
     <wsdl:portType name="ExchangeServicePortType">
       <wsdl:operation name="EndSearchSession">
         <wsdl:input message="tns:EndSearchSessionSoapIn" />
         <wsdl:output message="tns:EndSearchSessionSoapOut" />
       </wsdl:operation>
       <wsdl:operation name="ExecuteSearch">
         <wsdl:input message="tns:ExecuteSearchSoapIn" />
         <wsdl:output message="tns:ExecuteSearchSoapOut" />
       </wsdl:operation>
       <wsdl:operation name="GetSearchSuggestions">
         <wsdl:input message="tns:GetSearchSuggestionsSoapIn" />
         <wsdl:output message="tns:GetSearchSuggestionsSoapOut" />
       </wsdl:operation>
       <wsdl:operation name="StartSearchSession">
         <wsdl:input message="tns:StartSearchSessionSoapIn" />
         <wsdl:output message="tns:StartSearchSessionSoapOut" />
       </wsdl:operation>
     </wsdl:portType>
     <wsdl:binding name="ExchangeServiceBinding" type="tns:ExchangeServicePortType">
       <wsdl:documentation>
         <wsi:Claim conformsTo="http://ws-i.org/profiles/basic/1.0" xmlns:wsi="http://ws-
i.org/schemas/conformanceClaim/"/>
       </wsdl:documentation>
       <soap:binding style="document" transport="http://schemas.xmlsoap.org/soap/http"/>
       <wsdl:operation name="EndSearchSession">
         <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/EndSearchSession" />
         <wsdl:input>
           <soap:header message="tns:EndSearchSessionSoapIn" part="RequestVersion"
use="literal"/>
```

```
            <soap:header message="tns:EndSearchSessionSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:body parts="request" use="literal" />
          </wsdl:input>
          <wsdl:output>
            <soap:body parts="EndSearchSessionResult" use="literal" />
            <soap:header message="tns:EndSearchSessionSoapOut" part="ServerVersion"
use="literal"/>
          </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="ExecuteSearch">
          <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/ExecuteSearch" />
          <wsdl:input>
            <soap:header message="tns:ExecuteSearchSoapIn" part="RequestVersion"
use="literal"/>
            <soap:header message="tns:ExecuteSearchSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:body parts="request" use="literal" />
          </wsdl:input>
          <wsdl:output>
            <soap:body parts="ExecuteSearchResult" use="literal" />
            <soap:header message="tns:ExecuteSearchSoapOut" part="ServerVersion"
use="literal"/>
          </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="GetSearchSuggestions">
          <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/GetSearchSuggestions
" />
          <wsdl:input>
            <soap:header message="tns:GetSearchSuggestionsSoapIn" part="RequestVersion"
use="literal"/>
            <soap:header message="tns:GetSearchSuggestionsSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:body parts="request" use="literal" />
          </wsdl:input>
          <wsdl:output>
            <soap:body parts="GetSearchSuggestionsResult" use="literal" />
            <soap:header message="tns:GetSearchSuggestionsSoapOut" part="ServerVersion"
use="literal"/>
          </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="StartSearchSession">
          <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/StartSearchSession"
/>
          <wsdl:input>
            <soap:header message="tns:StartSearchSessionSoapIn" part="RequestVersion"
use="literal"/>
            <soap:header message="tns:StartSearchSessionSoapIn" part="MailboxCulture"
use="literal"/>
            <soap:body parts="request" use="literal" />
          </wsdl:input>
          <wsdl:output>
            <soap:body parts="StartSearchSessionResult" use="literal" />
            <soap:header message="tns:StartSearchSessionSoapOut" part="ServerVersion"
use="literal"/>
          </wsdl:output>
        </wsdl:operation>
      </wsdl:binding>
      <wsdl:message name="EndSearchSessionSoapIn">
        <wsdl:part name="request" element="tns:EndSearchSession"/>
        <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
        <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
      </wsdl:message>
      <wsdl:message name="EndSearchSessionSoapOut">
        <wsdl:part name="EndSearchSessionResult" element="tns:EndSearchSessionResponse"/>
        <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
```

```
      </wsdl:message>
      <wsdl:message name="ExecuteSearchSoapIn">
        <wsdl:part name="request" element="tns:ExecuteSearch"/>
        <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
        <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
      </wsdl:message>
      <wsdl:message name="ExecuteSearchSoapOut">
        <wsdl:part name="ExecuteSearchResult" element="tns:ExecuteSearchResponse"/>
        <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
      </wsdl:message>
      <wsdl:message name="GetSearchSuggestionsSoapIn">
        <wsdl:part name="request" element="tns:GetSearchSuggestions"/>
        <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
        <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
      </wsdl:message>
      <wsdl:message name="GetSearchSuggestionsSoapOut">
        <wsdl:part name="GetSearchSuggestionsResult"
  element="tns:GetSearchSuggestionsResponse"/>
        <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
      </wsdl:message>
      <wsdl:message name="StartSearchSessionSoapIn">
        <wsdl:part name="request" element="tns:StartSearchSession"/>
        <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
        <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
      </wsdl:message>
      <wsdl:message name="StartSearchSessionSoapOut">
        <wsdl:part name="StartSearchSessionResult" element="tns:StartSearchSessionResponse"/>
        <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
      </wsdl:message>
  </wsdl:definitions>
```

7 Appendix B: Full XML Schema

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

Schema name	Prefix	Section
Messages schema	m:	7.1
Types schema	t:	7.2

These files have to be placed in a common folder in order for the WSDL to validate and operate. Also, any schema files that are included in or imported into the MS-OXWSOLPS-types.xsd or MS-OXWSOLPS-messages.xsd schemas have to be placed in the common folder along with the files listed in the table.

7.1 Messages Schema

This section contains the contents of the MS-OXWSOLPS-messages.xsd file and information about additional files that this schema file requires to operate correctly.

MS-OXWSOLPS-messages.xsd includes the file listed in the following table. To operate correctly, this file has to be present in the folder that contains the **WSDL**, types schema, and messages schema files for this protocol.

File name	Defining specification
MS-OXWSCDATA-messages.xsd	[MS-OXWSCDATA] section 7.1
MS-OXWSOLPS-types.xsd	7.2

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/messages"
elementFormDefault="qualified" version="Exchange2016" id="messages">
  <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="MS-OXWSOLPS-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSCDATA-messages.xsd"/>
  <xs:complexType name="EndSearchSession">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="EndSearchSession" type="m:EndSearchSession"/>
  <xs:complexType name="EndSearchSessionResponseMessage">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType" />
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="EndSearchSessionResponse" type="m:EndSearchSessionResponseMessage"/>
  <xs:element name="ExecuteSearch" type="m:ExecuteSearch"/>
  <xs:complexType name="ExecuteSearch">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
```

```
          <xs:element name="ApplicationId" type="t:SearchApplicationIdType" minOccurs="1"
maxOccurs="1"/>
          <xs:element name="Scenario" type="xs:string" minOccurs="1" maxOccurs="1"/>
          <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
          <xs:element name="SearchScope" type="t:ArrayOfSearchScopeType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="Query" type="xs:string" minOccurs="1" maxOccurs="1" />
          <xs:element name="AnalyzedQuery" type="t:AnalyzedQuery" minOccurs="0"
maxOccurs="1"/>
          <xs:element name="ResultRowCount" type="xs:long" minOccurs="0" maxOccurs="1" />
          <xs:element name="ResultRowOffset" type="xs:long" minOccurs="0" maxOccurs="1" />
          <xs:element name="MaxResultsCountHint" type="xs:long" minOccurs="0" maxOccurs="1"
/>
          <xs:element name="MaxPreviewLength" type="xs:long" minOccurs="0" maxOccurs="1"/>
          <xs:element name="SearchRefiners" minOccurs="0" maxOccurs="1">
            <xs:complexType>
              <xs:sequence>
                <xs:element name="SearchRefiner" type="t:DynamicRefinerQueryType"
minOccurs="0" maxOccurs="unbounded"/>
              </xs:sequence>
            </xs:complexType>
          </xs:element>
          <xs:element name="RetrieveRefiners" type="xs:boolean" minOccurs="0" maxOccurs="1"
/>
          <xs:element name="MaxRefinersCountPerRefinerType" type="xs:long" minOccurs="0"
maxOccurs="1" />
          <xs:element name="IdFormat" type="t:IdFormatType" minOccurs="0" maxOccurs="1"/>
          <xs:element name="ItemTypes" type="t:ItemTypesFilterType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="PropertySetName" type="t:SearchResultsPropertySetNameType"
minOccurs="0" maxOccurs="1"/>
          <xs:element name="SearchRestrictions" type="t:RestrictionType" minOccurs="0"
maxOccurs="1"/>
          <xs:element name="IncludeDeleted" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:complexType name="ExecuteSearchResponseMessage">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType">
        <xs:sequence>
          <xs:element name="SearchResults" type="t:SearchResultsType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="ExecuteSearchResponse" type="m:ExecuteSearchResponseMessage"/>
  <xs:complexType name="GetSearchSuggestions">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
          <xs:element name="Query" type="xs:string" minOccurs="0" maxOccurs="1" />
          <xs:element name="SuggestionTypes" type="t:SuggestionKindType" minOccurs="0"
maxOccurs="1" />
          <xs:element name="SuggestionsPrimer" type="xs:boolean" minOccurs="0"
maxOccurs="1"/>
          <xs:element name="MaxSuggestionsCountPerSuggestionType" type="xs:long"
minOccurs="0" maxOccurs="1" />
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GetSearchSuggestions" type="m:GetSearchSuggestions"/>
  <xs:complexType name="GetSearchSuggestionsResponseMessage">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType">
        <xs:sequence>
```

```
          <xs:element name="SearchSuggestions" type="t:SearchSuggestionsType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="GetSearchSuggestionsResponse"
type="m:GetSearchSuggestionsResponseMessage"/>
  <xs:complexType name="StartSearchSession">
    <xs:complexContent>
      <xs:extension base="m:BaseRequestType">
        <xs:sequence>
          <xs:element name="SearchSessionId" type="t:GuidType" minOccurs="1" maxOccurs="1" />
          <xs:element name="WarmupOptions" type="t:WarmupOptionsType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="SuggestionTypes" type="t:SuggestionKindType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="SearchScope" type="t:ArrayOfSearchScopeType" minOccurs="1"
maxOccurs="1" />
          <xs:element name="IdFormat" type="t:IdFormatType" minOccurs="0" maxOccurs="1" />
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="StartSearchSession" type="m:StartSearchSession"/>
  <xs:complexType name="StartSearchSessionResponseMessage">
    <xs:complexContent>
      <xs:extension base="m:ResponseMessageType">
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="StartSearchSessionResponse" type="m:StartSearchSessionResponseMessage"/>
</xs:schema>
```

7.2 Types Schema

This section contains the contents of the MS-OXWSOLPS-types.xsd file and information about additional files that this schema file requires to operate correctly.

MS-OXWSOLPS-types.xsd includes the file shown in the following table. To operate correctly, this file has to be present in the folder that contains the WSDL, types schema, and messages schema files for this protocol.

File name	Defining specification
MS-OXWSCDATA-types.xsd	[MS-OXWSCDATA] section 7.2
MS-OXWSCONV-types.xsd	[MS-OXWSCONV] section 7.2
MS-OXWSCORE-types.xsd	[MS-OXWSCORE] section 7.2
MS-OXWSCVTID-types.xsd	[MS-OXWSCVTID] section 7.2
MS-OXWSPERS-types.xsd	[MS-OXWSPERS] section 7.2
MS-OXWSSRCH-types.xsd	[MS-OXWSSRCH] section 7.2
MS-OXWSXPROP-types.xsd	[MS-OXWSXPROP] section 5

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
elementFormDefault="qualified" version="Exchange2016" id="types">
  <xs:include schemaLocation="MS-OXWSCDATA-types.xsd"/>
```

```
  <xs:include schemaLocation="MS-OXWSCONV-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSCORE-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSCVTID-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSPERS-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSSRCH-types.xsd"/>
  <xs:include schemaLocation="MS-OXWSXPROP-types.xsd"/>
  <xs:complexType name="AnalyzedQuery">
    <xs:sequence>
      <xs:element name="QueryLanguage" type="xs:string" minOccurs="1" maxOccurs="1"/>
      <xs:element name="SearchRestrictions" type="t:RestrictionType" minOccurs="1"
maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="ArrayOfSearchScopeType">
    <xs:sequence>
      <xs:element name="PrimaryMailboxSearchScope" type="t:PrimaryMailboxSearchScopeType"
minOccurs="0" maxOccurs="1"/>
      <xs:element name="LargeArchiveSearchScope" type="t:LargeArchiveSearchScopeType"
minOccurs="0" maxOccurs="1"/>
      <xs:element name="GroupSearchScope" type="t:GroupSearchScopeType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="CustomSearchScope" type="t:CustomSearchScopeType" minOccurs="0"
maxOccurs="4"/>
      <xs:element name="SingleGroupSearchScope" type="t:SingleGroupSearchScopeType"
minOccurs="0" maxOccurs="1"/>
      <xs:element name="OneDriveSearchScope" type="t:OneDriveSearchScopeType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="SingleLargeArchiveSearchScope"
type="t:SingleLargeArchiveSearchScopeType" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
<xs:complexType name="CustomSearchScopeType">
    <xs:sequence>
      <xs:element name="MailboxGuid" type="t:GuidType"/>
      <xs:element name="FolderScope" type="t:SearchFolderScopeType" />
      <xs:element name="IsDeepTraversal" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="DynamicRefinerQueryType">
    <xs:sequence>
      <xs:element name="RefinerQuery" type="xs:string" minOccurs="1" maxOccurs="1" />
      <xs:element name="TDRefinerId" type="xs:int" minOccurs="1" maxOccurs="1" />
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="GroupSearchScopeType">
    <xs:sequence>
      <xs:element name="GroupTypes" type="t:SearchScopeGroupsType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="LargeArchiveSearchScopeType">
    <xs:sequence>
      <xs:element name="ArchiveTypes" type="t:SearchScopeArchivesType"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="OneDriveSearchScopeType">
    <xs:sequence>
      <xs:element name="OneDriveView" type="t:OneDriveViewType" minOccurs="1" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="PrimaryMailboxSearchScopeType">
    <xs:sequence>
      <xs:element name="FolderScope" type="t:SearchFolderScopeType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="IsDeepTraversal" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="SearchFolderScopeType">
    <xs:choice>
      <xs:element name="FolderId" type="t:FolderIdType"/>
```

```
      <xs:element name="WellKnownFolder" type="t:DistinguishedFolderIdType"/>
    </xs:choice>
  </xs:complexType>
  <xs:complexType name="SearchRefinerType">
    <xs:sequence>
      <xs:element name="RefinerType" type="t:RefinerTypeType" minOccurs="1" maxOccurs="1"/>
      <xs:element name="Refiner" type="t:DynamicRefinerQueryType" minOccurs="1"
maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="SearchResultsType">
    <xs:sequence>
      <xs:element name="Items" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Item" type="t:ItemType" minOccurs="0" maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="Conversations" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Conversation" type="t:ConversationType" minOccurs="0"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="People" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="Persona" type="t:PersonaType" minOccurs="0"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="MoreResultsAvailable" type="xs:boolean" minOccurs="1" maxOccurs="1"
/>
      <xs:element name="RefinerTelemetryBatchId" type="xs:int" minOccurs="1" maxOccurs="1"/>
      <xs:element name="SearchRefiners" minOccurs="0" maxOccurs="1">
        <xs:complexType>
          <xs:sequence>
            <xs:element name="SearchRefiner" type="t:SearchRefinerType" minOccurs="1"
maxOccurs="unbounded"/>
          </xs:sequence>
        </xs:complexType>
      </xs:element>
      <xs:element name="DiagnosticsData" type="t:SearchDiagnosticsType" minOccurs="0"
maxOccurs="1"/>
      <xs:element name="SearchResultsCount" type="xs:int" minOccurs="0" maxOccurs="1" />
      <xs:element name="TotalResultsCount" type="xs:int" minOccurs="0" maxOccurs="1" />
      <xs:element name="SearchTerms" type="t:ArrayOfStringsType" minOccurs="0"
maxOccurs="1"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="SingleGroupSearchScopeType">
    <xs:sequence>
      <xs:element name="GroupIdentity" type="t:UnifiedGroupIdentity"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="SingleLargeArchiveSearchScopeType">
    <xs:sequence>
      <xs:element name="MailboxGuid" type="t:GuidType" minOccurs="0" maxOccurs="1"/>
      <xs:element name="FolderScope" type="t:SearchFolderScopeType"/>
      <xs:element name="IsDeepTraversal" type="xs:boolean"/>
    </xs:sequence>
  </xs:complexType>
  <xs:complexType name="UnifiedGroupIdentity">
    <xs:sequence>
      <xs:element name="Type" type="t:UnifiedGroupIdentityType" minOccurs="1" maxOccurs="1"/>
```

```
    <xs:element name="Value" type="xs:string" minOccurs="1" maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
<xs:simpleType name="ItemTypesFilterType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="MailItems"/>
        <xs:enumeration value="MailConversations"/>
        <xs:enumeration value="CalendarItems"/>
        <xs:enumeration value="People"/>
        <xs:enumeration value="OneDriveItems"/>
        <xs:enumeration value="FileItems"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:simpleType name="OneDriveViewType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="SharedWithMe"/>
        <xs:enumeration value="MyDocuments"/>
        <xs:enumeration value="RecycleBin"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:simpleType name="RefinerTypeType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="None"/>
    <xs:enumeration value="To"/>
    <xs:enumeration value="From"/>
    <xs:enumeration value="Folder"/>
    <xs:enumeration value="HasAttachment"/>
    <xs:enumeration value="MailboxSource"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SearchApplicationIdType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Outlook"/>
    <xs:enumeration value="Owa"/>
    <xs:enumeration value="Paw"/>
    <xs:enumeration value="Teamspace"/>
    <xs:enumeration value="OneDrive"/>
    <xs:enumeration value="Other"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SearchResultsPropertySetNameType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Default"/>
    <xs:enumeration value="Owa16"/>
    <xs:enumeration value="Outlook16"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="SearchScopeArchivesType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="MainArchive"/>
        <xs:enumeration value="AuxArchive"/>
        <xs:enumeration value="All"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:simpleType name="SearchScopeGroupsType">
```

```
      <xs:list>
        <xs:simpleType>
          <xs:restriction base="xs:string">
            <xs:enumeration value="MyGroups"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:list>
    </xs:simpleType>
    <xs:simpleType name="UnifiedGroupIdentityType">
      <xs:restriction base="xs:string">
        <xs:enumeration value="SmtpAddress"/>
        <xs:enumeration value="LegacyDn"/>
        <xs:enumeration value="ExternalDirectoryObjectId"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:schema>
```

8 Appendix C: 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 Exchange Server 2016
- Microsoft Exchange Server 2019

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.

9 Change Tracking

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

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

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

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

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

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

Section	Description	Revision class
3.1.4.2.3.2 ArrayOfSearchScopeType Complex Type	Updated description for SingleGroupSearchScope.	Minor
3.1.4.2.3.5 ExecuteSearch Complex Type	Updated description for ResultRowCount.	Minor

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