[MS-OXWSSRCH]:

Mailbox Search Web Service Protocol

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Revision Summary

Date	Revision History	Revision Class	Comments
7/15/2009	1.0	Major	Initial Availability.
11/4/2009	1.1.0	Minor	Updated the technical content.
2/10/2010	1.1.0	None	Version 1.1.0 release
5/5/2010	1.1.1	Editorial	Revised and edited the technical content.
8/4/2010	2.0	Major	Significantly changed the technical content.
11/3/2010	2.1	Minor	Clarified the meaning of the technical content.
3/18/2011	3.0	Major	Significantly changed the technical content.
8/5/2011	4.0	Major	Significantly changed the technical content.
10/7/2011	5.0	Major	Significantly changed the technical content.
1/20/2012	6.0	Major	Significantly changed the technical content.
4/27/2012	6.0	None	No changes to the meaning, language, or formatting of the technical content.
7/16/2012	7.0	Major	Significantly changed the technical content.
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2/11/2013	8.0	None	No changes to the meaning, language, or formatting of the technical content.
7/26/2013	8.1	Minor	Clarified the meaning of the technical content.
11/18/2013	8.2	Minor	Clarified the meaning of the technical content.
2/10/2014	8.2	None	No changes to the meaning, language, or formatting of the technical content.
4/30/2014	9.0	Major	Significantly changed the technical content.
7/31/2014	10.0	Major	Significantly changed the technical content.
10/30/2014	10.1	Minor	Clarified the meaning of the technical content.
5/26/2015	11.0	Major	Significantly changed the technical content.
9/14/2015	12.0	Major	Significantly changed the technical content.
6/13/2016	13.0	Major	Significantly changed the technical content.
9/14/2016	13.0	None	No changes to the meaning, language, or formatting of the technical content.
1/12/2017	13.1	Minor	Clarified the meaning of the technical content.
7/24/2018	14.0	Major	Significantly changed the technical content.
10/1/2018	15.0	Major	Significantly changed the technical content.
8/17/2021	16.0	Major	Significantly changed the technical content.

Date	Revision History	Revision Class	Comments
11/16/2021	16.0	None	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1   Introduction

The Mailbox Search Web Service Protocol is used to search the contents of a server 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:

Deleted Items folder: A special folder that is the default location for objects that have been deleted.

endpoint: A communication port that is exposed by an application server for a specific shared service and to which messages can be addressed.

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].

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

message store: A unit of containment for a single hierarchy of Folder objects, such as a mailbox or public folders.

root folder: The folder at the top of a hierarchy of folders in a list.

search folder: A collection of related items to be crawled by a search service.

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

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

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

SOAP 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.

SOAP message: An XML document consisting of a mandatory SOAP envelope, an optional **SOAP header**, and a mandatory **SOAP body**. See [SOAP1.2-1/2007] section 5 for more information.

Uniform Resource Identifier (URI): A string that identifies a resource. The URI is an addressing mechanism defined in Internet Engineering Task Force (IETF) Uniform Resource Identifier (URI): Generic Syntax [RFC3986].

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

web server: A server computer that hosts websites and responds to requests from applications.

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

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

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

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

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

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

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

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

1.2   References

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

1.2.1   Normative References

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

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

[MS-OXWSCONT] Microsoft Corporation, "Contacts Web Service Protocol".

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

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

[MS-OXWSDLIST] Microsoft Corporation, "Distribution List Creation and Usage Web Service Protocol".

[MS-OXWSFOLD] Microsoft Corporation, "Folders and Folder Permissions Web Service Protocol".

[MS-OXWSGTZ] Microsoft Corporation, "Get Server Time Zone Web Service Protocol".

[MS-OXWSMSG] Microsoft Corporation, "Email Message Types Web Service Protocol".

[MS-OXWSMTGS] Microsoft Corporation, "Calendaring Web Service Protocol".

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

[MS-OXWSPOST] Microsoft Corporation, "Post Items Web Service Protocol".

[MS-OXWSTASK] Microsoft Corporation, "Tasks 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

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

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

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

[XMLSCHEMA0] Fallside, D., and Walmsley, P., Eds., "XML Schema Part 0: Primer, Second Edition", W3C Recommendation, October 2004, http://www.w3.org/TR/2004/REC-xmlschema-0-20041028/

[XMLSCHEMA1] Thompson, H., Beech, D., Maloney, M., and Mendelsohn, N., Eds., "XML Schema Part 1: Structures", W3C Recommendation, May 2001, https://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

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

1.2.2 Informative References

[MS-OXDSCLI] Microsoft Corporation, "Autodiscover Publishing and Lookup Protocol".

[MS-OXPROTO] Microsoft Corporation, "Exchange Server Protocols System Overview".

[MS-OXWSADISC] Microsoft Corporation, "Autodiscover Publishing and Lookup SOAP-Based Web Service Protocol".

1.3 Overview

This protocol provides clients with operations that enable them to search the contents of a server **message store** and to return the results of that search.

1.4 Relationship to Other Protocols

A client that implements this protocol can use the Autodiscover Publishing and Lookup SOAP-based Web Service Protocol, as described in [MS-OXWSADISC], or the Autodiscover Publishing and Lookup Protocol, as described in [MS-OXDSCLI], to identify the target **endpoint** to use for each operation.

This protocol uses the SOAP Protocol, as described in [SOAP1.1], to describe the structure information that is exchanged between the client and server. This protocol uses the XML Protocol, as described in [XMLSCHEMA1] and [XMLSCHEMA2], to describe the message content that is sent to and from the server.

This protocol uses the **Simple Object Access Protocol (SOAP)** over the **Hypertext Transfer Protocol (HTTP)**, as described in [RFC2616], and SOAP over the **Hypertext Transfer Protocol over Secure Sockets Layer (HTTPS)**, as described in [RFC2818], as shown in the following layering diagram.
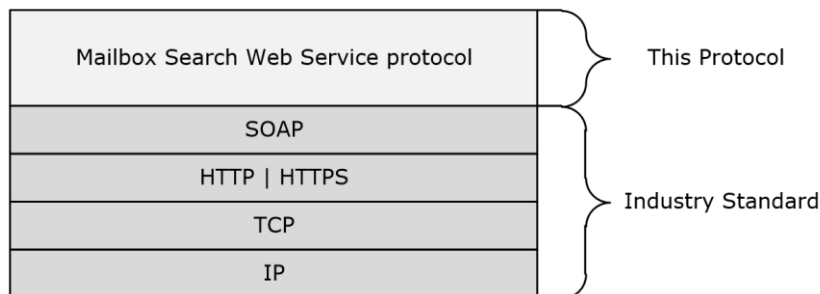
Figure 1: This protocol in relation to other protocols

This protocol specifies searches that identify items in the server **message store**. After the item identifier is returned, one of the following protocols is used to return the information from the message store:

- Folders and Folder Permissions Web Service Protocol, as described in [MS-OXWSFOLD]

- Email Message Types Web Service Protocol, as described in [MS-OXWSMSG]

- Calendaring Web Service Protocol, as described in [MS-OXWSMTGS]

- Post Items Web Service Protocol, as described in [MS-OXWSPOST]

- Tasks Web Service Protocol, as described in [MS-OXWSTASK]

For conceptual background information and overviews of the relationships and interactions between this and other protocols, see [MS-OXPROTO].

1.5 Prerequisites/Preconditions

The **endpoint URL** that is returned by either the Autodiscover Publishing Lookup SOAP-Based Web Service Protocol, as described in [MS-OXWSADISC], or the Autodiscover Publishing Lookup Protocol, as described in [MS-OXDSCLI], is required to form the **HTTP** request to the **web server** that hosts this protocol. The operations that this protocol defines cannot be accessed unless the correct endpoint is identified in the HTTP Web requests that target this protocol.

1.6 Applicability Statement

This protocol is applicable to client applications that search the contents of the server **message store**.

1.7 Versioning and Capability Negotiation

This document covers versioning issues in the following areas:

- **Supported Transports:** This protocol uses multiple transports with SOAP 1.1, as specified in section 2.1.

- **Protocol Versions:** This protocol specifies only one **WSDL port type** version. The WSDL version of the request is identified by using the **RequestServerVersion** element, as described in [MS-OXWSCDATA] section 2.2.3.9, and the version of the server responding to the request is identified by using the **ServerVersionInfo** element, as described in [MS-OXWSCDATA] section 2.2.3.10.

- **Security and Authentication Methods:** This protocol relies on the Web server that is hosting it to perform authentication.

- **Localization:** This protocol includes text strings in various messages. Localization considerations for such strings are specified in section 3.1.4.

- **Capability Negotiation:** This protocol does not support version negotiation.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

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

The SOAP version that is supported is SOAP 1.1. For details, see [SOAP1.1].

This protocol relies on the **web server** that hosts the application to perform authentication. Protocol servers MUST support **SOAP** over **HTTP**, as defined in [RFC2616]. The protocol SHOULD additionally support secure communications via **HTTPS**, as defined in [RFC2818].

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

2.2.1 Namespaces

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

Prefix	Namespace URI	Reference
soap	http://schemas.xmlsoap.org/wsdl/soap/	[SOAP1.1]
tns	http://schemas.microsoft.com/exchange/services/2006/messages	
wsdl	http://schemas.xmlsoap.org/wsdl/	[WSDL]
wsi	http://ws-i.org/schemas/conformanceClaim/	[WSIBASIC]
t	http://schemas.microsoft.com/exchange/services/2006/types	
xs	http://www.w3.org/2001/XMLSchema	[XMLSCHEMA1], [XMLSCHEMA2]

2.2.2 Messages

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

2.2.3 Elements

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

Element	Description
And	Specifies a search expression that performs a Boolean **AND** operation between two or more search expressions.
Contains	Specifies a search expression that determines whether a given property contains the supplied constant string value.
Excludes	Specifies a search expression that performs a bitwise mask of the specified property and a supplied value.
Exists	Specifies a search expression that determines whether the specified property exists on an item.
IsEqualTo	Specifies a search expression that compares a property value with either a constant value or another property value and evaluates to true if the two are equal.
IsGreaterThan	Specifies a search expression that compares a property with either a constant value or another property value and evaluates to true if the first property is greater than the second.
IsGreaterThanOrEqualTo	Specifies a search expression that compares a property with either a constant value or another property and evaluates to true if the first property is greater than or equal to the second.
IsLessThan	Specifies a search expression that compares a property to either a constant value or another property and evaluates to true if the first property is less than the second.
IsLessThanOrEqualTo	Specifies a search expression that compares a property to either a constant value or another property and evaluates to true if the first property is less than or equal to the second.
IsNotEqualTo	Specifies a search expression that compares a property value with either a constant value or another property value and evaluates to true if the two are not the same.
Not	Specifies a search expression that negates the Boolean value of a search expression that it contains.
Or	Specifies a search expression that performs a Boolean **OR** operation on two or more search expressions.
PerformInstantSearch	For internal use only.
PerformInstantSearchResponse	For internal use only.
SearchExpression	Specifies the base schema type for all search expressions. This type is abstract and will never occur directly within instance documents.

2.2.3.1 tns:And Element

The **And** element specifies a search expression that performs a Boolean **AND** operation between two or more search expressions. The **AND** operation evaluates to **TRUE** if all the search expressions that are contained within the **And** element are **TRUE**.

```
<xs:element name="And"
    type="t:AndType"
    substitutionGroup="t:SearchExpression"
```

```
  />
```

2.2.3.2 tns:Contains Element

The **Contains** element specifies a search expression that determines whether a given property contains the supplied constant string value.

```
<xs:element name="Contains"
  type="t:ContainsExpressionType"
  substitutionGroup="t:SearchExpression"
 />
```

2.2.3.3 tns:Excludes Element

The **Excludes** element specifies a search expression that performs a bitwise mask of the specified property and a supplied value.

```
<xs:element name="Excludes"
  type="t:ExcludesType"
  substitutionGroup="t:SearchExpression"
 />
```

2.2.3.4 tns:Exists Element

The **Exists** element specifies a search expression that determines whether the specified property exists on an item. The **Exists** element evaluates to true if the specified property exists on the item.

```
<xs:element name="Exists"
  type="t:ExistsType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.5 tns:IsEqualTo Element

The **IsEqualTo** element specifies a search expression that compares a property value with either a constant value or another property value and evaluates to true if they are equal.

```
<xs:element name="IsEqualTo"
  type="t:IsEqualToType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.6 tns:IsGreaterThan Element

The **IsGreaterThan** element specifies a search expression that compares a property with either a constant value or another property and evaluates to true if the first property is greater.

```
<xs:element name="IsGreaterThan"
  type="t:IsGreaterThanType"
  substitutionGroup="t:SearchExpression"
```

```
      />
```

2.2.3.7 tns:IsGreaterThanOrEqualTo Element

The **IsGreaterThanOrEqualTo** element specifies a search expression that compares a property with either a constant value or another property and evaluates to true if the first property is greater than or equal to the second.

```
<xs:element name="IsGreaterThanOrEqualTo"
  type="t:IsGreaterThanOrEqualToType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.8 tns:IsLessThan Element

The **IsLessThan** element specifies a search expression that compares a property to either a constant value or another property and evaluates to true if the first property is less than the second.

```
<xs:element name="IsLessThan"
  type="t:IsLessThanType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.9 tns:IsLessThanOrEqualTo Element

The **IsLessThanOrEqualTo** element specifies a search expression that compares a property to either a constant value or another property and evaluates to true if the first property is less than or equal to the second.

```
<xs:element name="IsLessThanOrEqualTo"
  type="t:IsLessThanOrEqualToType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.10   tns:IsNotEqualTo Element

The **IsNotEqualTo** element specifies a search expression that compares a property value with either a constant value or another property value and evaluates to true if they are not the same.

```
<xs:element name="IsNotEqualTo"
  type="t:IsNotEqualToType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.11   tns:Not Element

The **Not** element specifies a search expression that negates the Boolean value of a search expression that it contains.

```
<xs:element name="Not"
  type="t:NotType" substitutionGroup="t:SearchExpression"
 />
```

2.2.3.12   tns:Or Element

The **Or** element specifies a search expression that performs a logical **OR** on the search expressions that it contains and evaluates to true if any of the search expressions evaluate to true.

```
<xs:element name="Or"
  type="t:OrType"
  substitutionGroup="t:SearchExpression"
/>
```

2.2.3.13   PerformInstantSearch Element

The **PerformInstantSearch** element is for internal use only.<1>

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

2.2.3.14   PerformInstantSearchResponse Element

The **PerformInstantSearchResponse** element is for internal use only.<2>

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

2.2.3.15   tns:SearchExpression Element

The **SearchExpression** element specifies the base schema type for all search expressions. This type is abstract and will never occur directly within instance documents. This type defines a substitution group.

```
<xs:element name="SearchExpression"
  type="t:SearchExpressionType"
 />
```

2.2.4 Complex Types

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

Complex type	Description
FindFolderResponseMessageType	Specifies the result body for the **FindFolder** operation (section 3.1.4.1).
FindItemResponseMessageType	Specifies the result body from the **FindItem** operation (section 3.1.4.2).

Complex type	Description
AndType	Specifies a search expression that performs a Boolean **AND** operation between two or more search expressions.
ArrayOfCalendaryItemsType	Specifies an array of **CalendarItemType** complex types ([MS-OXWSMTGS] section 2.2.4.6).
ArrayOfGroupedItemsType	Specifies an array of items that are returned by the **FindItem** operation.
ArrayOfItemsType	Specifies an array of **ItemType** complex types ([MS-OXWSCORE] section 2.2.4.24).
BasePagingType	Specifies the base type for derived types that specify paged views.
ContainsExpressionType	Specifies a search expression that determines whether a given property contains the supplied constant string value.
ExcludesType	Specifies a bitwise mask of a property for an exclude search restriction.
ExcludesValueType	Specifies a hexadecimal or decimal mask for an exclude search restriction.
ExistsType	Specifies a search restriction that resolves to true if the supplied property exists on an item.
FindFolderParentType	Specifies the results of searching a single Root folder during a **FindFolder** operation, as specified in section 3.1.4.1.
FindItemParentType	Specifies the results of searching a single **Root folder** during a **FindItem** operation, as specified in section 3.1.4.2.
FractionalPageViewType	Specifies where a paged view starts and the maximum number of items that are returned.
GroupedItemsType	Specifies a collection of items that are the result of a grouped **FindItem** operation.
IndexedPageViewType	Specifies how paged item information is returned by the **FindItem** or the **FindFolder** operation.
InstantSearchPayloadType	For internal use only.
IsEqualToType	Specifies a search expression that compares a property with either a constant value or another property and evaluates to "true" if they are equal.
IsGreaterThanOrEqualToType	Specifies a search expression that compares a property with either a constant value or another property and evaluates to "true" if the first property is greater than or equal to the second.
IsGreaterThanType	Specifies a search expression that compares a property with either a constant value or another property and returns "true" if the first property is greater.
IsLessThanOrEqualToType	Specifies a search expression that compares a property with either a constant value or another property and evaluates to true if the first property is less than or equal to the second.
IsLessThanType	Specifies a search expression that compares a property with either a constant value or another property and evaluates to true if the first property is less than the second.

Complex type	Description
IsNotEqualToType	Specifies a search expression that compares a property with either a constant value or another property and evaluates to true if the values are not the same.
MultipleOperandBooleanExpressionType	Specifies the base type for search expressions that are formed by two or more Boolean operands.
NotType	Specifies a search expression that negates the Boolean value of the search expression that it contains.
OrType	Specifies a search expression that performs a logical **OR** on the search expression that it contains.
PerformInstantSearchRequest	For internal use only.
PerformInstantSearchResponse	For internal use only.
RestrictionType	Specifies a search restriction or query for the **FindItem** operation or the **FindFolder** operation.
SearchExpressionType	Specifies the base type for all search expressions.
SearchParametersType	Specifies the search parameters that define the contents of a **search folder**.
SeekToConditionPageViewType	Specifies a condition that has to be met in order for an item to be included in the result set that is returned by the **FindItem** operation or the **FindFolder** operation.<3>
TwoOperandExpressionType	Specifies the base type for derived classes that represent a restriction that is formed by comparing two values against one another.
QueryStringType	Specifies a query string.<4>

2.2.4.1 t:AndType Complex Type

The **AndType** complex type specifies a search expression that performs a Boolean **AND** operation between two or more search expressions. The result of the **AND** operation is **TRUE** if all the search expressions that are contained within the **AndType** complex type are true. The **AndType** complex type extends the **MultipleOperandBooleanExpressionType** complex type, as specified in section 2.2.4.24.

```
<xs:complexType name="AndType">
  <xs:complexContent>
    <xs:extension
      base="t:MultipleOperandBooleanExpressionType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.2 t:ArrayOfCalendarItemsType Complex Type

The **ArrayOfCalendarItemsType** complex type specifies an array of calendar items that are returned in a search.<5>

```
<xs:complexType name="ArrayOfCalendarItemsType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="CalendarItem" type="t:CalendarItemType"/>
  </xs:choice>
</xs:complexType>
```

The following table describes the child element of the **ArrayOfCalendarItemsType** complex type.

Element	Type	Description
CalendarItem	**t:CalendarItemType** ([MS-OXWSMTGS] section 2.2.4.6)	A calendar item.

2.2.4.3 t:ArrayOfGroupedItemsType Complex Type

The **ArrayOfGroupedItemsType** complex type specifies an array of items that are returned by the **FindItem** operation, as specified in section 3.1.4.2.

```
<xs:complexType name="ArrayOfGroupedItemsType">
  <xs:choice>
    <xs:element name="GroupedItems" type="t:GroupedItemsType" minOccurs="0"
maxOccurs="unbounded"/>
  </xs:choice>
</xs:complexType>
```

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

Element	Type	Description
GroupedItems	**t:GroupedItemsType** (section 2.2.4.15)	Specifies an array of items that are returned by the **FindItem** operation.

2.2.4.4 t:ArrayOfItemsType Complex Type

The **ArrayOfItemsType** complex type specifies an array of items that are returned in a search.<6>

```
<xs:complexType name="ArrayOfItemsType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="Item" type="t:ItemType"/>
  </xs:choice>
</xs:complexType>
```

The following table describes the child element of the **ArrayOfItemsType** complex type.

Element	Type	Description
Item	**t:ItemType (**[MS-OXWSCORE] section 2.2.4.24)	A generic item.

2.2.4.5 t:BasePagingType Complex Type

The **BasePagingType** complex type specifies the base type for derived types that specify paged views.

```
<xs:complexType name="BasePagingType"
  abstract="true"
>
  <xs:attribute name="MaxEntriesReturned"
    type="xs:int"
    use="optional"
  />
</xs:complexType>
```

The following table lists the attribute definition for the **BasePagingType** complex type.

Attribute	Type	Description
MaxEntriesReturned	**xs:int** [XMLSCHEMA2]	Specifies the maximum number of entries that are returned with each page of the response. This attribute can be specified.

2.2.4.6 t:ContainsExpressionType Complex Type

The **ContainsExpressionType** complex type specifies a search expression that determines whether a given property contains the supplied constant string value. The **ContainsExpressionType** complex type extends the **SearchExpressionType** complex type, as specified in section 2.2.4.31.

```
<xs:complexType name="ContainsExpressionType">
  <xs:complexContent>
    <xs:extension
      base="t:SearchExpressionType"
    >
      <xs:sequence>
        <xs:element
          ref="t:Path"
        />
        <xs:element name="Constant"
          type="t:ConstantValueType"
        />
      </xs:sequence>
      <xs:attribute name="ContainmentMode"
        type="t:ContainmentModeType"
        use="optional"
      />
      <xs:attribute name="ContainmentComparison"
        type="t:ContainmentComparisonType"
        use="optional"
      />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
Path	**t:Path** ([MS-OXWSCDATA] section 2.2.3.8)	Specifies the property to use in a **contains** search expression. The **Path** element specifies a substitution group, as specified in [XMLSCHEMA0]. An element that is represented by the **Path** element **substitutionGroup** attribute MUST be present.
Constant	**t:ConstantValueType** ([MS-OXWSCDATA] section 2.2.4.23)	Specifies a constant value for a search restriction.

The following table lists the attribute definitions for the **ContainsExpressionType** complex type.

Attribute	Type	Description
ContainmentMode	**t:ContainmentModeType** (section 2.2.5.2)	Specifies the boundaries of a search.
ContainmentComparison	**t:ContainmentComparisonType** (section 2.2.5.1)	Specifies whether a search ignores cases and spaces.

2.2.4.7 t:ExcludesType Complex Type

The **ExcludesType** complex type specifies a bitwise mask of a property for an **exclude** search restriction. The **ExcludesType** complex type extends the **SearchExpressionType** complex type, as specified in section 2.2.4.31.

```
<xs:complexType name="ExcludesType">
  <xs:complexContent>
    <xs:extension
      base="t:SearchExpressionType"
    >
      <xs:sequence>
        <xs:element
          ref="t:Path"
        />
        <xs:element name="Bitmask"
          type="t:ExcludesValueType"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
Path	**t:Path** ([MS-OXWSCDATA] section 2.2.3.8)	Specifies the property to use in an **excludes** search expression. The **Path** element specifies a substitution group, as specified in [XMLSCHEMA0]. An element that is represented by the **Path** element **substitutionGroup** attribute MUST be present.
Bitmask	**t:ExcludesValueType** (section 2.2.4.8)	Specifies a hexadecimal or decimal mask for an **excludes** restriction.

An **excludes** restriction can only be applied to a property that has an integer value.

2.2.4.8 t:ExcludesValueType Complex Type

The **ExcludesValueType** complex type specifies a hexadecimal or decimal mask for a restriction that excludes some results.

```
<xs:complexType name="ExcludesValueType">
  <xs:attribute name="Value"
    type="t:ExcludesAttributeType"
    use="required"
  />
</xs:complexType>
```

The following table lists the attribute definition for the **ExcludesValueType** complex type.

Attribute	Type	Description
Value	**t:ExcludesAttributeType** ([MS-OXWSCDATA] section 2.2.5.15)	Specifies a decimal or hexadecimal bitmask for an exclude restriction.

2.2.4.9 t:ExistsType Complex Type

The **ExistsType** complex type specifies a search restriction that resolves to true if the supplied property exists on an item. The **ExistsType** complex type extends the **SearchExpressionType** complex type, as specified in section 2.2.4.31.

```
<xs:complexType name="ExistsType">
  <xs:complexContent>
    <xs:extension
      base="t:SearchExpressionType"
    >
      <xs:sequence>
        <xs:element
          ref="t:Path"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
Path	**Path** ([MS-OXWSCDATA] section 2.2.3.8)	Specifies the property to use in an **excludes** search expression. The **Path** element specifies a substitution group, as specified in [XMLSCHEMA0]. An element that is represented by the **Path** element **substitutionGroup** attribute MUST be present.

2.2.4.10   t:FindFolderParentType Complex Type

The **FindFolderParentType** complex type specifies an array of folders and paging information that are returned in the results of a call to the **FindFolder** operation, as specified in section 3.1.4.1.

```
<xs:complexType name="FindFolderParentType">
  <xs:sequence>
    <xs:element name="Folders" type="t:ArrayOfFoldersType" minOccurs="0"/>
  </xs:sequence>
  <xs:attributeGroup
    ref="t:FindResponsePagingAttributes"
    />
</xs:complexType>
```

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

Element	Type	Description
Folders	**t:ArrayOfFoldersType** ([MS-OXWSFOLD] section 2.2.4.2)	Specifies the folders in the result set.

The following table lists the attribute group that is defined for the **FindFolderParentType** complex type.

Attribute group	Description
t:FindResponsePagingAttributes ([MS-OXWSCDATA] section 2.2.8.1)	Specifies zero or more attributes that describe the result set.

2.2.4.11   m:FindFolderResponseMessageType Complex Type

The **FindFolderResponseMessageType** complex type specifies the response message for the **FindFolder** operation, as specified in section 3.1.4.1. The **FindFolderResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [MS-OXWSCDATA] section 2.2.4.65.

```
<xs:complexType name="FindFolderResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseMessageType"
    >
      <xs:sequence>
        <xs:element name="RootFolder" type="t:FindFolderParentType" minOccurs="0"
         />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
RootFolder	**t:FindFolderParentType** (section 2.2.4.10)	Specifies an array of folders and paging information that is returned by the **FindFolder** operation.

2.2.4.12 t:FindItemParentType Complex Type

The **FindItemParentType** complex type specifies the results of a search of a single **Root folder**.

```
<xs:complexType name="FindItemParentType">
  <xs:choice>
    <xs:element name="Items"
      type="t:ArrayOfRealItemsType"
      />
    <xs:element name="Groups"
      type="t:ArrayOfGroupedItemsType"
      />
  </xs:choice>
  <xs:attributeGroup
    ref="t:FindResponsePagingAttributes"
    />
</xs:complexType>
```

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

Element	Type	Description
Items	**t:ArrayOfRealItemsType** ([MS-OXWSCDATA] section 2.2.4.10)	Specifies the results of a search in which the items returned are not grouped.
Groups	**t:ArrayOfGroupedItemsType** (section 2.2.4.3)	Specifies the grouped results of a search.

The following table lists the attribute group that is defined for the **FindItemParentType** complex type.

Attribute group	Description
t:FindResponsePagingAttributes ([MS-OXWSCDATA] section 2.2.8.1)	Specifies zero or more attributes that describe the result set.

If a **GroupBy** or **DistinguishedGroupBy** element was specified in the **FindItemType** complex type, as specified in section 3.1.4.2.3.2, instance that was sent to the **FindItem** operation, as specified in section 3.1.4.2, any results of the operation are returned in the **Groups** element; otherwise, the results are returned in the **Items** element.

2.2.4.13 m:FindItemResponseMessageType Complex Type

The **FindItemResponseMessageType** complex type specifies the result body from the **FindItem** operation, as specified in section 3.1.4.2. The **FindItemResponseMessageType** complex type extends the **ResponseMessageType** complex type, as specified in [MS-OXWSCDATA] section 2.2.4.65.

```
<xs:complexType name="FindItemResponseMessageType">
  <xs:complexContent>
    <xs:extension
      base="m:ResponseMessageType"
    >
      <xs:sequence>
        <xs:element name="RootFolder" type="t:FindItemParentType" minOccurs="0"
          />
      </xs:sequence>
```

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

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

Element	Type	Description
RootFolder	**t:FindItemParentType** (section 2.2.4.12)	Specifies the **Root folder** of the response.

2.2.4.14   t:FractionalPageViewType Complex Type

The **FractionalPageViewType** complex type specifies where a paged view starts and the maximum number of items that are returned. The **FractionalPageViewType** complex type extends the **BasePagingType** complex type, as specified in section 2.2.4.5.

```
    <xs:complexType name="FractionalPageViewType">
      <xs:complexContent>
        <xs:extension
          base="t:BasePagingType"
        >
          <xs:attribute name="Numerator"
            type="xs:int"
            use="required"
          />
          <xs:attribute name="Denominator"
            type="xs:int"
            use="required"
          />
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
```

The following table lists the attributes that are defined for the **FractionalPageViewType** complex type.

Attribute	Type	Description
Denominator	**xs:int** [XMLSCHEMA2]	Specifies the denominator of the fractional offset from the start of the total number of items in the result set.
Numerator	**xs:int**	Specifies the numerator of the fractional offset from the start of the total number of items in the result set.

2.2.4.15   t:GroupedItemsType Complex Type

The **GroupedItemsType** complex type specifies a collection of items that are the result of a grouped **FindItem** operation, as specified in section 3.1.4.2.

```
    <xs:complexType name="GroupedItemsType">
      <xs:sequence>
        <xs:element name="GroupIndex"
```

```
      type="xs:string"
    />
  <xs:element name="Items"
    type="t:ArrayOfRealItemsType"
    />
  </xs:sequence>
</xs:complexType>
```

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

Element	Type	Description
GroupIndex	**xs:string** [XMLSCHEMA2]	Specifies the property value that is used to group the items.
Items	**t:ArrayOfRealItemsType** ([MS-OXWSCDATA] section 2.2.4.10)	Specifies the group of items that correspond to the specified group value.

2.2.4.16   t:IndexedPageViewType Complex Type

The **IndexedPageViewType** complex type specifies how paged item information is returned by the **FindItem** operation, as specified in section 3.1.4.2, or the **FindFolder** operation, as specified in section 3.1.4.1. The **IndexedPageViewType** complex type extends the **BasePagingType** complex type, as specified in section 2.2.4.5.

```
<xs:complexType name="IndexedPageViewType">
  <xs:complexContent>
    <xs:extension
      base="t:BasePagingType"
    >
      <xs:attribute name="Offset"
        type="xs:int"
        use="required"
       />
      <xs:attribute name="BasePoint"
        type="t:IndexBasePointType"
        use="required"
       />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists the attributes that are defined for the **IndexedPageViewType** complex type.

Attribute	Type	Description
Offset	**xs:int** [XMLSCHEMA2]	Specifies the offset from the **BasePoint** element. This attribute MUST be specified.
BasePoint	**t:IndexBasePointType** (section 2.2.5.4)	Specifies whether the page of items starts at the beginning or end of the set of items that were found by the search. This attribute MUST be specified.

2.2.4.17 t:InstantSearchPayloadType Complex Type

The **InstantSearchPayloadType** complex type is for internal use only.<7>

```
<xs:complexType name="InstantSearchPayloadType">
  <xs:sequence>
    <xs:element name="SearchSessionId" type="xs:string" minOccurs="1" maxOccurs="1"/>
    <xs:element name="SearchRequestId" type="xs:long" minOccurs="1" maxOccurs="1"/>
    <xs:element name="ResultType" type="t:InstantSearchResultType" minOccurs="1"
maxOccurs="1"/>
    <xs:element name="Items" type="t:ArrayOfItemsType" minOccurs="0" maxOccurs="1"/>
    <xs:element name="Conversations" type="t:ArrayOfConversationsType" minOccurs="0"
maxOccurs="1"/>
    <xs:element name="CalendarItems" type="t:ArrayOfCalendarItemsType" minOccurs="0"
maxOccurs="1"/>
  </xs:sequence>
</xs:complexType>
```

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

Element	Type	Description
SearchSessionId	**xs:string** ([XMLSCHEMA2])	For internal use only.
SearchRequestId	**xs:long** ([XMLSCHEMA2])	For internal use only.
ResultType	**t:InstantSearchResultType** (section 2.2.5.6)	For internal use only.
Items	**t:ArrayOfItemsType** (section 2.2.4.4)	For internal use only.
Conversations	**t:ArrayOfConversationsType** ([MS-OXWSCONV] section 3.1.4.2.3.1)	For internal use only.
CalendarItems	**t:ArrayOfCalendarItemsType** (section 2.2.4.2)	For internal use only.

2.2.4.18 t:IsEqualToType Complex Type

The **IsEqualToType** complex type specifies a search expression that compares a property with either a constant value or another property and evaluates to true if they are equal. The **IsEqualToType** complex type extends the **TwoOperandExpressionType** complex type, as specified in section 2.2.4.35.

```
<xs:complexType name="IsEqualToType">
  <xs:complexContent>
    <xs:extension
      base="t:TwoOperandExpressionType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.19 t:IsGreaterThanOrEqualToType Complex Type

The **IsGreaterThanOrEqualToType** complex type specifies a search expression that compares a property with either a constant value or another property and evaluates to "true" if the first property is greater than or equal to the second. The **IsGreaterThanOrEqualToType** complex type extends the **TwoOperandExpressionType** complex type, as specified in section 2.2.4.35.

```
<xs:complexType name="IsGreaterThanOrEqualToType">
  <xs:complexContent>
    <xs:extension
      base="t:TwoOperandExpressionType"
      />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.20 t:IsGreaterThanType Complex Type

The **IsGreaterThanType** complex type specifies a search expression that compares a property with either a constant value or another property and returns "true" if the first property is greater. The **IsGreaterThanType** complex type extends the **TwoOperandExpressionType** complex type, as specified in section 2.2.4.35.

```
<xs:complexType name="IsGreaterThanType">
  <xs:complexContent>
    <xs:extension
      base="t:TwoOperandExpressionType"
      />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.21 t:IsLessThanOrEqualToType Complex Type

The **IsLessThanOrEqualToType** complex type specifies a search expression that compares a property with either a constant value or another property and evaluates to "true" if the first property is less than or equal to the second. The **IsLessThanOrEqualToType** complex type extends the **TwoOperandExpressionType** complex type, as specified in section 2.2.4.35.

```
<xs:complexType name="IsLessThanOrEqualToType">
  <xs:complexContent>
    <xs:extension
      base="t:TwoOperandExpressionType"
      />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.22 t:IsLessThanType Complex Type

The **IsLessThanType** complex type specifies a search expression that compares a property with either a constant value or another property and evaluates to "true" if the first property is less than the second. The **IsLessThanType** complex type extends the **TwoOperandExpressionType** complex type, as specified in section 2.2.4.35.

```
<xs:complexType name="IsLessThanType">
  <xs:complexContent>
```

```
    <xs:extension
      base="t:TwoOperandExpressionType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.23   t:IsNotEqualToType Complex Type

The **IsNotEqualToType** complex type specifies a search expression that compares a property with either a constant value or another property and evaluates to "true" if the values are not the same. The **IsNotEqualToType** complex type extends the **TwoOperandExpressionType** complex type, as specified in section 2.2.4.35.

```
<xs:complexType name="IsNotEqualToType">
  <xs:complexContent>
    <xs:extension
      base="t:TwoOperandExpressionType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.24   t:MultipleOperandBooleanExpressionType Complex Type

The **MultipleOperandBooleanExpressionType** complex type specifies the base type for search expressions that are formed by two or more Boolean operands. The **MultipleOperandBooleanExpressionType** complex type extends the **SearchExpressionType** complex type, as specified in section 2.2.4.31.

```
<xs:complexType name="MultipleOperandBooleanExpressionType"
  abstract="true"
>
  <xs:complexContent>
    <xs:extension
      base="t:SearchExpressionType"
    >
      <xs:sequence>
        <xs:element
          minOccurs="1"
          maxOccurs="unbounded"
          ref="t:SearchExpression"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SearchExpression	**t:SearchExpression** (section 2.2.3.15)	Specifies a search expression.

2.2.4.25   t:NotType Complex Type

The **NotType** complex type specifies a search expression that negates the Boolean value of the search expression that it contains. The **NotType** complex type extends the **SearchExpressionType** complex type, as specified in section 2.2.4.31.

```
<xs:complexType name="NotType">
  <xs:complexContent>
    <xs:extension
      base="t:SearchExpressionType"
    >
      <xs:sequence>
        <xs:element
          ref="t:SearchExpression"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SearchExpression	**t:SearchExpression** (section 2.2.3.15)	Specifies a search expression.

2.2.4.26   t:OrType Complex Type

The **OrType** complex type specifies a search expression that performs a logical **OR** on the search expression that it contains. The result of the **OR** operation is **TRUE** if any of the search expressions that are contained within the **OrType** complex type is true. The **OrType** complex type extends the **MultipleOperandBooleanExpressionType** complex type, as specified in section 2.2.4.24.

```
<xs:complexType name="OrType">
  <xs:complexContent>
    <xs:extension
      base="t:MultipleOperandBooleanExpressionType"
    />
  </xs:complexContent>
</xs:complexType>
```

2.2.4.27   m:PerformInstantSearchRequest Complex Type

The **PerformInstantSearchRequest** complex type is for internal use only.<8>

```
<xs:complexType name="PerformInstantSearchRequest">
  <xs:complexContent>
    <xs:extension base="m:BaseRequestType">
      <xs:sequence>
        <xs:element name="SearchSessionId" type="xs:string" minOccurs="1" maxOccurs="1"/>
        <xs:element name="ItemType" type="t:InstantSearchItemType" minOccurs="1"
maxOccurs="1"/>
        <xs:element name="QueryOptions" type="t:QueryOptionsType" minOccurs="1"
maxOccurs="1"/>
        <xs:element name="SearchRequestId" type="xs:long" minOccurs="1" maxOccurs="1"/>
        <xs:element name="KqlQuery" type="xs:string" minOccurs="1" maxOccurs="1"/>
```

```
            <xs:element name="FolderScope" type="t:ArrayOfFolderIdType" minOccurs="1"
maxOccurs="1"/>
            <xs:element name="DistinguishedFolderScope" type="t:ArrayOfDistinguishedFolderIdType"
minOccurs="0" maxOccurs="1"/>
            <xs:element name="IsDeepTraversal" type="xs:boolean" minOccurs="0" maxOccurs="1"/>
            <xs:element name="WaitOnSearchResults" type="xs:boolean" minOccurs="0"
maxOccurs="1"/>
        </xs:sequence>
      </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
SearchSessionId	**xs:string** ([XMLSCHEMA2])	For internal use only.
ItemType	**t:InstantSearchItemType (section 2.2.5.5)**	For internal use only.
QueryOptions	**t:QueryOptionsType** (section 2.2.5.8)	For internal use only.
SearchRequestId	**xs:long** ([XMLSCHEMA2])	For internal use only.
KqlQuery	**xs:string**	For internal use only.
FolderScope	**t:ArrayOfFolderIdType** ([MS-OXWSPERS] section 2.2.4.4)	For internal use only.
DistinguishedFolderScope	**t:ArrayOfDistinguishedFolderIdType** ([MS-OXWSCDATA] section 2.2.4.6)	For internal use only.
IsDeepTraversal	**xs:boolean** ([XMLSCHEMA2])	For internal use only.
WaitOnSearchResults	**xs:boolean**	For internal use only.

2.2.4.28   m:PerformInstantSearchResponse Complex Type

The **PerformInstantSearchResponse** complex type is for internal use only.<9>

```
<xs:complexType name="PerformInstantSearchResponse">
  <xs:complexContent>
    <xs:extension base="m:ResponseMessageType">
      <xs:sequence>
        <xs:element name="Payload" type="t:InstantSearchPayloadType" minOccurs="0"
maxOccurs="1"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
Payload	**t:InstantSearchPayloadType** (section 2.2.4.17)	For internal use only.

2.2.4.29   m:QueryStringType Complex Type

The **QueryStringType** complex type specifies a query string.

```
<xs:complexType name="QueryStringType">
  <xs:simpleContent>
    <xs:extension base="xs:string">
      <xs:attribute name="ResetCache" type="xs:boolean" use="optional"/>
      <xs:attribute name="ReturnHighlightTerms" type="xs:boolean" use="optional"/>
      <xs:attribute name="ReturnDeletedItems" type="xs:boolean" use="optional"/>
    </xs:extension>
  </xs:simpleContent>
</xs:complexType>
```

The following table lists and describes the attributes of the **QueryStringType** complex type.

Attribute	Type	Description
ResetCache	**xs:boolean** ([XMLSCHEMA2])	Specifies whether to clear the cache.
ReturnHighlightTerms	**xs:boolean**	Specifies whether to return highlighted terms in the search.
ReturnDeletedItems	**xs:boolean**	Specifies whether to return deleted items in the search.

2.2.4.30   t:RestrictionType Complex Type

The **RestrictionType** complex type specifies a search restriction or query for a **FindItem** operation, as specified in section 3.1.4.2, or a **FindFolder** operation, as specified in section 3.1.4.1.

```
<xs:complexType name="RestrictionType">
  <xs:sequence>
    <xs:element
      ref="t:SearchExpression"
    />
  </xs:sequence>
</xs:complexType>
```

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

Element	Type	Description
SearchExpression	**t:SearchExpression** (section 2.2.3.15)	Specifies the search term that defines the restriction.

2.2.4.31   t:SearchExpressionType Complex Type

The **SearchExpressionType** complex type specifies the base type for all search expressions.

```
<xs:complexType name="SearchExpressionType"
  abstract="true"
 />
```

2.2.4.32   t:SearchFolderType Complex Type

The SearchFolderType complex type specifies a representation of a search folder that is contained in a mailbox. This type extends the **FolderType** complex type, as specified in [MS-OXWSFOLD] section 2.2.4.12.

```
<xs:complexType name="SearchFolderType">
  <xs:complexContent>
    <xs:extension
      base="t:FolderType"
    >
      <xs:sequence>
        <xs:element name="SearchParameters"
          type="t:SearchParametersType"
         />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists the child elements of the SearchFolderType complex type.

Element name	Type	Description
SearchParameters	t:SearchParametersType (section 2.2.4.33)	Specifies the search parameters that define the contents of the search folder. This element can be present.

2.2.4.33   t:SearchParametersType Complex Type

The SearchParametersType complex type specifies the search parameters that define the contents of a search folder.

```
<xs:complexType name="SearchParametersType">
  <xs:sequence>
    <xs:element name="Restriction"
      type="t:RestrictionType"
     />
    <xs:element name="BaseFolderIds"
      type="t:NonEmptyArrayOfBaseFolderIdsType"
     />
  </xs:sequence>
  <xs:attribute name="Traversal"
    type="t:SearchFolderTraversalType"
   />
</xs:complexType>
```

The following table lists the child elements of the SearchParametersType complex type.

Element name	Type	Description
Restriction	t:RestrictionType (section 2.2.4.30)	Specifies the query that defines the contents of a search folder.
BaseFolderIds	t:NonEmptyArrayOfBaseFolderIdsType ([MS-OXWSFOLD] section 3.1.4.6.3.3)	Specifies an array of folder identifiers that identify the folders that are searched.

The following table lists the attributes that are defined for the SearchParametersType complex type.

Attribute name	Type	Description
Traversal	t:SearchFolderTraversalType (section 2.2.5.9)	Specifies the depth of a search folder subtree traversal.

2.2.4.34 t:SeekToConditionPageViewType Complex Type

The **SeekToConditionPageViewType** complex type specifies a condition that has to be satisfied in order to include an item in the result set from the **FindItem** operation, as specified in section 3.1.4.2, or the **FindFolder** operation, as specified in section 3.1.4.1. The **SeekToConditionPageViewType** complex type extends the **BasePagingType** complex type, as specified in section 2.2.4.5.<10>

```
<xs:complexType name="SeekToConditionPageViewType">
  <xs:complexContent>
    <xs:extension base="t:BasePagingType">
      <xs:sequence>
        <xs:element name="Condition" type="t:RestrictionType"
          minOccurs="1"
        />
      </xs:sequence>
      <xs:attribute name="BasePoint" type="t:IndexBasePointType"
        use="required"
      />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
Condition	**t:RestrictionType** (section 2.2.4.30)	Specifies the search term used to determine if an item is to be included in the result set.

The following table lists the attribute of the **SeekToConditionPageViewType** complex type.

Attribute	Type	Description
BasePoint	**t:IndexBasePointType** (section 2.2.5.4)	Specifies whether the search term should be applied from the beginning or end of the result set.

2.2.4.35 t:TwoOperandExpressionType Complex Type

The **TwoOperandExpressionType** complex type specifies the base type for derived classes that represent a restriction that is formed by comparing two values against one another. The **TwoOperandExpressionType** complex type extends the **SearchExpressionType** complex type, as specified in section 2.2.4.31.

```xml
<xs:complexType name="TwoOperandExpressionType"
  abstract="true"
>
  <xs:complexContent>
    <xs:extension
      base="t:SearchExpressionType"
    >
      <xs:sequence>
        <xs:element
          ref="t:Path"
        />
        <xs:element name="FieldURIOrConstant"
          type="t:FieldURIOrConstantType"
        />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

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

Element	Type	Description
Path	**t:Path** ([MS-OXWSCDATA] section 2.2.3.8)	Specifies the property path that is searched on for each item or folder in a search.
FieldURIOrConstant	**t:FieldURIOrConstantType** ([MS-OXWSCDATA] section 2.2.4.34)	Specifies the property or constant that is compared with each item or folder in a restriction.

2.2.5 Simple Types

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

Simple type	Description
ContainmentComparisonType	Specifies whether a search is exact or whether it ignores casing and spaces.
ContainmentModeType	Specifies the search boundaries.
FolderQueryTraversalType	Specifies the types of subtree traversals for deletion and enumeration.
IndexBasePointType	Specifies whether a page of items that are returned starts at the beginning or at the end of the set of items that are found by the search.
InstantSearchItemType	For internal use only.
InstantSearchResultType	For internal use only.

Simple type	Description
ItemQueryTraversalType	Specifies whether a search finds items in folders or in the **Deleted Items folder**.
QueryOptionsType	For internal use only.

2.2.5.1 t:ContainmentComparisonType Simple Type

The **ContainmentComparisonType** simple type specifies whether a search is exact or whether it ignores casing and spaces.

```
<xs:simpleType name="ContainmentComparisonType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Exact"
     />
    <xs:enumeration
      value="IgnoreCase"
     />
    <xs:enumeration
      value="IgnoreNonSpacingCharacters"
     />
    <xs:enumeration
      value="Loose"
     />
    <xs:enumeration
      value="IgnoreCaseAndNonSpacingCharacters"
     />
    <xs:enumeration
      value="LooseAndIgnoreCase"
     />
    <xs:enumeration
      value="LooseAndIgnoreNonSpace"
     />
  </xs:restriction>
      value="LooseAndIgnoreCaseAndIgnoreNonSpace"
     />
    <xs:enumeration
</xs:simpleType>
```

The following table lists the values that are defined by the **ContainmentComparisonType** simple type.

Value	Meaning
Exact	Specifies that the comparison MUST be exact.
IgnoreCase	Specifies that the comparison ignores casing.
IgnoreCaseAndNonSpacingCharacters	Specifies that the comparison ignores casing and non-spacing characters.
IgnoreNonSpacingCharacters	Specifies that the comparison ignores non-spacing characters.
Loose	This value MUST NOT be used.

Value	Meaning
LooseAndIgnoreCase	This value MUST NOT be used.
LooseAndIgnoreCaseAndIgnoreNonSpace	This value MUST NOT be used.
LooseAndIgnoreNonSpace	This value MUST NOT be used.

2.2.5.2 t:ContainmentModeType Simple Type

The **ContainmentModeType** simple type specifies the search boundaries.

```
<xs:simpleType name="ContainmentModeType">
  <xs:restriction base="xs:string">
    <xs:enumeration
      value="FullString"
     />
    <xs:enumeration
      value="Prefixed"
     />
    <xs:enumeration
      value="Substring"
     />
    <xs:enumeration
      value="PrefixOnWords"
     />
    <xs:enumeration
      value="ExactPhrase"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **ContainmentModeType** simple type.

Value	Meaning
ExactPhrase	Specifies that the comparison is between the exact phrase in the property and the constant. If the phrase and the supplied constant are the same, the expression resolves to true.
FullString	Specifies that the comparison is between the full string value of the property and the constant. If the property value and the supplied constant are the same, the expression resolves to true.
Prefixed	Specifies that the comparison is between the prefix of the property and the constant. If the prefix of the property value matches the value that is provided in the constant, the expression resolves to true.
PrefixOnWords	Specifies that the comparison is between a prefix on any individual word in the property value and the constant. If any of the words are prefixed with a value that matches the value that is provided in the constant, the expression resolves to true.
Substring	Specifies that the comparison is between a substring of the property value and the constant. If the substring exists anywhere in the property value, the expression resolves to true.

2.2.5.3 t:FolderQueryTraversalType Simple Type

The **FolderQueryTraversalType** simple type specifies the types of subtree traversals for deletion and enumeration.

```
<xs:simpleType name="FolderQueryTraversalType">
  <xs:restriction base="xs:string">
    <xs:enumeration
      value="Shallow"
     />
    <xs:enumeration
      value="Deep"
     />
    <xs:enumeration
      value="SoftDeleted"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **FolderQueryTraversalType** simple type.

Value	Meaning
Deep	Specifies a search in all subfolders of the identified parent folder and returns only the folder IDs for items that have not been deleted.
Shallow	Specifies a search in only the identified folder and returns only the folder IDs for items that have not been deleted.
SoftDeleted	Specifies a shallow traversal search for items that are in the **Deleted Items folder**.

2.2.5.4 t:IndexBasePointType Simple Type

The **IndexBasePointType** simple type specifies whether a page of items that are returned by the **FindFolder** operation, as specified in section 3.1.4.1, or **FindItem** operation, as specified in section 3.1.4.2, start at the beginning or at the end of the set of items that are found by the search.

```
<xs:simpleType name="IndexBasePointType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Beginning"
     />
    <xs:enumeration
      value="End"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **IndexBasePointType** simple type.

Value	Meaning
Beginning	Specifies that the page of items starts from the beginning of the set of items that are returned by the search.

Value	Meaning
End	Specifies that the page of items starts from the end of the set of items that are returned by the search.

2.2.5.5 t:InstantSearchItemType Simple Type

The **InstantSearchItemType** simple type is for internal use only.<11>

```
<xs:simpleType name="InstantSearchItemType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="MailItem"/>
        <xs:enumeration value="MailConversation"/>
        <xs:enumeration value="CalendarItem"/>
        <xs:enumeration value="Persona"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table lists the values of the **InstantSearchItemType** simple type.

Value	Meaning
None	For internal use only.
MailItem	For internal use only.
MailConversation	For internal use only.
CalendarItem	For internal use only.
Persona	For internal use only.

2.2.5.6 t:InstantSearchResultType Simple Type

The **InstantSearchResultType** simple type is for internal use only.<12>

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

```
                  <xs:enumeration value="Suggestions"/>
                  <xs:enumeration value="ItemResults"/>
                  <xs:enumeration value="ConversationResults"/>
                  <xs:enumeration value="Refiners"/>
                  <xs:enumeration value="SearchTerms"/>
                  <xs:enumeration value="Errors"/>
                  <xs:enumeration value="QueryStatistics"/>
                  <xs:enumeration value="CalendarItemResults"/>
                  <xs:enumeration value="PersonaResults"/>
                  <xs:enumeration value="SuggestionsPrimer"/>
          </xs:restriction>
        </xs:simpleType>
      </xs:list>
</xs:simpleType>
```

The following table lists the values of the **InstantSearchResultType** simple type.

Value	Meaning
None	For internal use only.
Suggestions	For internal use only.
ItemResults	For internal use only.
ConversationResults	For internal use only.
Refiners	For internal use only.
SearchTerms	For internal use only.
Errors	For internal use only.
QueryStatistics	For internal use only.
CalendarItemResults	For internal use only.
PersonaResults	For internal use only.
SuggestionsPrimer	For internal use only.

2.2.5.7 t:ItemQueryTraversalType Simple Type

The **ItemQueryTraversalType** simple type specifies whether the search finds items in folders or in the **Deleted Items folder**.

```
<xs:simpleType name="ItemQueryTraversalType">
  <xs:restriction base="xs:string">
    <xs:enumeration
      value="Shallow"
    />
    <xs:enumeration
      value="SoftDeleted"
    />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **ItemQueryTraversalType** simple type.

Value	Description
Shallow	Specifies that only the items in the folder are returned.
SoftDeleted	Specifies that only the items in the Deleted Items folder are returned.

2.2.5.8 t:QueryOptionsType Simple Type

The **QueryOptionsType** simple type is for internal use only.<13>

```
<xs:simpleType name="QueryOptionsType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="Suggestions"/>
        <xs:enumeration value="Results"/>
        <xs:enumeration value="Refiners"/>
        <xs:enumeration value="SearchTerms"/>
        <xs:enumeration value="ExplicitSearch"/>
        <xs:enumeration value="SuggestionsPrimer"/>
        <xs:enumeration value="AllowFuzzing"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
```

The following table lists the values of the **QueryOptionsType** simple type.

Value	Meaning
None.	For internal use only.
Suggestions	For internal use only.
Results	For internal use only.

Value	Meaning
Refiners	For internal use only.
SearchTerms	For internal use only.
ExplicitSearch	For internal use only.
SuggestionsPrimer	For internal use only.
AllowFuzzing	For internal use only.

2.2.5.9 t:SearchFolderTraversalType Simple Type

The SearchFolderTraversalType simple type specifies the options for how a folder hierarchy is searched when the contents of a search folder are identified.

```
<xs:simpleType name="SearchFolderTraversalType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Deep"
     />
    <xs:enumeration
      value="Shallow"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the SearchFolderTraversalType simple type.

Value	Meaning
Deep	Specifies that a deep search is used to traverse the folder hierarchy.
Shallow	Specifies that a shallow search is used to traverse the folder hierarchy.

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.

3.1   ExchangeServicePortType Server Details

The Mailbox Search Web Service Protocol defines a single port type with two operations. These operations enable client applications to search for items in the **mailbox** and folders.

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
FindFolder	Searches the **message store** and returns a folder or folders that match the specified search criteria.
FindItem	Searches the message store and returns the item or items that match the specified search criteria.

3.1.4.1   FindFolder Operation

The **FindFolder** operation obtains a list of folders that meet specified search criteria by searching the subfolders of a specified folder.

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

```
<wsdl:operation name="FindFolder">
     <wsdl:input message="tns:FindFolderSoapIn"/>
     <wsdl:output message="tns:FindFolderSoapOut"/>
</wsdl:operation>
```

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

```
<wsdl:operation name="FindFolder">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/FindFolder"/>
```

```
      <wsdl:input>
         <soap:header message="tns:FindFolderSoapIn" part="Impersonation" use="literal"/>
         <soap:header message="tns:FindFolderSoapIn" part="MailboxCulture" use="literal"/>
         <soap:header message="tns:FindFolderSoapIn" part="RequestVersion" use="literal"/>
         <soap:header message="tns:FindFolderSoapIn" part="TimeZoneContext" use="literal"/>
         <soap:header message="tns:FindFolderSoapIn" part="ManagementRole" use="literal"/>
         <soap:body parts="request" use="literal" />
      </wsdl:input>
      <wsdl:output>
         <soap:body parts="FindFolderResult" use="literal" />
         <soap:header message="tns:FindFolderSoapOut" 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
FindFolderSoapIn	Specifies the **SOAP message** that defines the folder or folders to search for.
FindFolderSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.1.1.1   tns:FindFolderSoapIn Message

The **FindFolderSoapIn WSDL message** specifies the search criteria for the folder or folders that are to be returned by the **FindFolder** operation.

```
   <wsdl:message name="FindFolderSoapIn">
      <wsdl:part name="request" element="tns:FindFolder"/>
      <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
      <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
      <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
      <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
      <wsdl:part name="ManagementRole" element="t:ManagementRole" />
   </wsdl:message>
```

The **FindFolderSoapIn** WSDL message is the input message for the **SOAP action** http://schemas.microsoft.com/exchange/services/2006/messages/FindFolder.

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

Part	Element/type	Description
request	**tns:FindFolder** (section 3.1.4.1.2.1)	Specifies the **SOAP body** of the request.
Impersonation	**t:ExchangeImpersonation** ([MS-OXWSCDATA] section 2.2.3.3)	Specifies a **SOAP header** that identifies the user whom the client application is impersonating.
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 **FindFolder** operation request.

Part	Element/type	Description
TimeZoneContext	**t:TimeZoneContext** ([MS-OXWSGTZ] section 2.2.3.4)	Specifies a SOAP header that identifies the time zone to use for all responses from the server. All times that are returned from the server will be converted to the specified time zone.
ManagementRole	**t:ManagementRole** ([MS-OXWSCDATA] section 2.2.3.7)	Specifies a SOAP header that identifies the server roles that are necessary in order for the caller to make the request.<14>

3.1.4.1.1.2   tns:FindFolderSoapOut Message

The **FindFolderSoapOut WSDL message** specifies the server response to the **FindFolder** operation request to find a folder or folders.

```
<wsdl:message name="FindFolderSoapOut">
    <wsdl:part name="FindFolderResult" element="tns:FindFolderResponse"/>
    <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
</wsdl:message>
```

The **FindFolderSoapOut** WSDL message is the output message for the **SOAP action** http://schemas.microsoft.com/exchange/services/2006/messages/FindFolder.

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

Part	Element/type	Description
FindFolderResult	**tns:FindFolderResponse** (section 3.1.4.1.2.2)	Specifies **SOAP body** of the response message to a **FindFolder** 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 **FindFolder** operation returns a **FindFolderResponse** element with the **ResponseClass** attribute of the **FindFolderResponseMessage** element set to "Success". The **ResponseCode** element of the **FindFolderResponseMessage** element is set to "NoError".

If the request is unsuccessful, the **FindFolder** operation returns a **FindFolderResponse** element with the **ResponseClass** attribute of the **FindFolderResponseMessage** element set to "Error". The **ResponseCode** element of the **FindFolderResponseMessage** element is set to a value of the **ResponseCodeType** simple type, as specified in [MS-OXWSCDATA] section 2.2.5.24.

3.1.4.1.2 Elements

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

Element	Description
FindFolder	Specifies the criteria required to search for a folder or folders.
FindFolderResponse	Specifies the response body from a request to search for a folder or folders.

3.1.4.1.2.1   tns:FindFolder Element

The **FindFolder** element specifies the base element for a **FindFolder** operation request.

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

3.1.4.1.2.2   tns:FindFolderResponse Element

The **FindFolderResponse** element specifies the response message for a **FindFolder** operation.

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

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
FindFolderResponseType	Specifies the response from the **FindFolder** operation.
FindFolderType	Specifies the criteria for searching for a folder or folders with the **FindFolder** operation.

3.1.4.1.3.1   m:FindFolderResponseType Complex Type

The **FindFolderResponseType** complex type extends the **BaseResponseMessageType** complex type ([MS-OXWSCDATA] section 2.2.4.18).

```
<xs:complexType name="FindFolderResponseType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseResponseMessageType"
     />
  </xs:complexContent>
</xs:complexType>
```

3.1.4.1.3.2   m:FindFolderType Complex Type

The **FindFolderType** complex type specifies a request to find folders in a **mailbox**. The **FindFolderType** complex type extends the **BaseRequestType** complex type ([MS-OXWSCDATA] section 2.2.4.17).

```
<xs:complexType name="FindFolderType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
      <xs:sequence>
        <xs:element name="FolderShape"
```

```
         type="t:FolderResponseShapeType"
      />
      <xs:choice
        maxOccurs="1"
        minOccurs="0"
      >
        <xs:element name="IndexedPageFolderView"
          type="t:IndexedPageViewType"
         />
        <xs:element name="FractionalPageFolderView"
          type="t:FractionalPageViewType"
         />
      </xs:choice>
      <xs:element name="Restriction"
        type="t:RestrictionType"
        minOccurs="0"
       />
      <xs:element name="ParentFolderIds"
        type="t:NonEmptyArrayOfBaseFolderIdsType"
       />
    </xs:sequence>
    <xs:attribute name="Traversal"
      type="t:FolderQueryTraversalType"
      use="required"
     />
   </xs:extension>
  </xs:complexContent>
 </xs:complexType>
```

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

Element	Type	Description
FolderShape	**t:FolderResponseShapeType** ([MS-OXWSCDATA] section 2.2.4.36)	Specifies the contents of the query response.
IndexedPageFolderView	**t:IndexedPageViewType** (section 2.2.4.16)	Specifies how paged information is returned by the query.
FractionalPageFolderView	**t:FractionalPageViewType** (section 2.2.4.14)	Specifies the starting item and the number of items that are returned by a paged query.
Restriction	**t:RestrictionType** (section 2.2.4.30)	Specifies the search parameters that define the folder query.
ParentFolderIds	**t:NonEmptyArrayOfBaseFolderIdsType** ([MS-OXWSFOLD] section 3.1.4.6.3.3)	Specifies the folders that the query searches.

The following table lists the attribute that is defined for the **FindFolderType** complex type.

Attribute	Type	Description
Traversal	**t:FolderQueryTraversalType** (section 2.2.5.3)	Specifies the traversal scheme that is used to search for folders.

The **FindFolderType** complex type specifies the folders to search for as well as the structure of the response.

Either the **IndexedPageFolderView** element or the **FractionalPageFolderView** element can be specified to paginate the items that are returned in the response.

3.1.4.2 FindItem Operation

The **FindItem** operation searches the **mailbox** and folders and returns items that meet the specified search criteria.

The following is the **WSDL port type** specification for the operation.

```
<wsdl:operation name="FindItem">
    <wsdl:input message="tns:FindItemSoapIn"/>
    <wsdl:output message="tns:FindItemSoapOut"/>
</wsdl:operation>
```

The following is the **WSDL** binding specification for the operation.[<15>](#)

```
<wsdl:operation name="FindItem">
   <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/FindItem"/>
   <wsdl:input>
      <soap:header message="tns:FindItemSoapIn" part="Impersonation" use="literal"/>
      <soap:header message="tns:FindItemSoapIn" part="MailboxCulture" use="literal"/>
      <soap:header message="tns:FindItemSoapIn" part="RequestVersion" use="literal"/>
      <soap:header message="tns:FindItemSoapIn" part="TimeZoneContext" use="literal"/>
      <soap:header message="tns:FindItemSoapIn" part="DateTimePrecision" use="literal" />
      <soap:header message="tns:FindItemSoapIn" part="ManagementRole" use="literal"/>
      <soap:body parts="request" use="literal" />
   </wsdl:input>
   <wsdl:output>
      <soap:body parts="FindItemResult" use="literal" />
      <soap:header message="tns:FindItemSoapOut" 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
FindItemSoapIn	Specifies the **SOAP message** that contains the criteria required to search for items.
FindItemSoapOut	Specifies the SOAP message that is returned by the server in response.

3.1.4.2.1.1   tns:FindItemSoapIn Message

The **FindItemSoapIn WSDL message** specifies the search criteria for the items or items that the **FindItem** operation returns.

```
<wsdl:message name="FindItemSoapIn">
   <wsdl:part name="request" element="tns:FindItem"/>
   <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
   <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
   <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
   <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
```

```
            <wsdl:part name="DateTimePrecision" element="t:DateTimePrecision" />
            <wsdl:part name="ManagementRole" element="t:ManagementRole" />
        </wsdl:message>
```

The **FindItemSoapIn** WSDL message is the input message for the **SOAP action**
http://schemas.microsoft.com/exchange/services/2006/messages/FindItem.

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

Part	Element/type	Description
request	**tns:FindItem** (section 3.1.4.2.2.1)	Specifies **SOAP body** of the request.
Impersonation	**t:ExchangeImpersonation** ([MS-OXWSCDATA] section 2.2.3.3)	Specifies a **SOAP header** that identifies the user that the client application is impersonating.
MailboxCulture	**t:MailboxCulture** ([MS-OXWSCDATA] section 2.2.3.6)	Specifies a SOAP header that identifies the culture to use to access 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 **FindItem** operation request.
TimeZoneContext	**t:TimeZoneContext** ([MS-OXWSGTZ] section 2.2.3.4)	Specifies a SOAP header that identifies the time zone to use for all responses from the server. All times that are returned from the server will be converted to the specified time zone.
DateTimePrecision	**t:DateTimePrecision** ([MS-OXWSCDATA] section 2.2.3.1)	Specifies a SOAP header that identifies the resolution of date/time values in responses from the server, either in seconds or in milliseconds.<16>
ManagementRole	**t:ManagementRole** ([MS-OXWSCDATA] section 2.2.3.7)	Specifies a SOAP header that identifies the server roles that are necessary in order for the caller to make the request.<17>

3.1.4.2.1.2   tns:FindItemSoapOut Message

The **FindItemSoapOut WSDL message** specifies the server response to the **FindItem** operation request.

```
        <wsdl:message name="FindItemSoapOut">
            <wsdl:part name="FindItemResult" element="tns:FindItemResponse"/>
            <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
        </wsdl:message>
```

The **FindItemSoapOut** WSDL message is the output message for the **SOAP action**
http://schemas.microsoft.com/exchange/services/2006/messages/FindItem.

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

Part	Element/type	Description
FindItemResult	**tns:FindItemResponse** (section 3.1.4.2.2.2)	Specifies **SOAP body** of the response to a **FindItem** 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 **FindItem** operation returns a **FindItemResponse** element with the **ResponseClass** attribute of the **FindItemResponseMessage** element set to "Success". The **ResponseCode** element of the **FindItemResponseMessage** element is set to "NoError".

If the request is unsuccessful, the **FindItem** operation returns a **FindItemResponse** element with the **ResponseClass** attribute of the **FindItemResponseMessage** element set to "Error". The **ResponseCode** element of the **FindItemResponseMessage** element is set to a value of the **ResponseCodeType** simple type, as specified in [MS-OXWSCDATA] section 2.2.5.24.

3.1.4.2.2 Elements

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

Element	Description
FindItem	Specifies the base element for the **FindItem** operation.
FindItemResponse	Specifies the response element for the **FindItem** operation.

3.1.4.2.2.1   tns:FindItem Element

The **FindItem** element specifies the base element for a **FindItem** operation.

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

3.1.4.2.2.2   tns:FindItemResponse Element

The **FindItemResponse** element specifies the response message for the **FindItem** operation.

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

3.1.4.2.3 Complex Types

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

Complex type	Description
FindItemResponseType	Specifies the response to the **FindItem** operation request.
FindItemType	Specifies the request to the **FindItem** operation.

Complex type	Description
AggregateOnType	Specifies the property that is used to determine the order of grouped items for a grouped result set.
BaseGroupByType	Specifies the base class for derived complex types that specify grouped queries to the **FindItem** operation.
DistinguishedGroupByType	Specifies a standard grouping for the **FindItem** operation.
FieldOrderType	Specifies a single field by which to sort results and specifies the direction of the sort.
GroupByType	Specifies the grouping for items returned by the **FindItem** operation.
NonEmptyArrayOfFieldOrdersType	Specifies an array of **FieldOrderType** complex type elements that contains at least one member.

3.1.4.2.3.1   m:FindItemResponseType Complex Type

The **FindItemResponseType** complex type specifies the response message to the **FindItem** operation request. The **FindItemResponseType** complex type extends the **BaseResponseMessageType** complex type ([MS-OXWSCDATA] section 2.2.4.18).

```
<xs:complexType name="FindItemResponseType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseResponseMessageType"
     />
  </xs:complexContent>
</xs:complexType>
```

3.1.4.2.3.2   m:FindItemType Complex Type

The **FindItemType** complex type specifies the search criteria to use for the **FindItem** operation. The **FindItemType** complex type extends the **BaseRequestType** complex type ([MS-OXWSCDATA] section 2.2.4.17).

```
<xs:complexType name="FindItemType">
  <xs:complexContent>
    <xs:extension
      base="m:BaseRequestType"
    >
      <xs:sequence>
        <xs:element name="ItemShape"
          type="t:ItemResponseShapeType"
         />
        <xs:choice
          minOccurs="0"
        >
          <xs:element name="IndexedPageItemView"
            type="t:IndexedPageViewType"
           />
          <xs:element name="FractionalPageItemView"
            type="t:FractionalPageViewType"
           />
          <xs:element name="CalendarView"
            type="t:CalendarViewType"
           />
          <xs:element name="ContactsView"
```

```
          type="t:ContactsViewType"
        />
    </xs:choice>
    <xs:choice
      minOccurs="0"
    >
        <xs:element name="GroupBy"
          type="t:GroupByType"
        />
        <xs:element name="DistinguishedGroupBy"
          type="t:DistinguishedGroupByType"
        />
    </xs:choice>
    <xs:element name="Restriction"
      type="t:RestrictionType"
      minOccurs="0"
     />
    <xs:element name="SortOrder"
      type="t:NonEmptyArrayOfFieldOrdersType"
      minOccurs="0"
     />
    <xs:element name="ParentFolderIds"
      type="t:NonEmptyArrayOfBaseFolderIdsType"
     />
    <xs:element name="QueryString"
      type="xs:QueryStringType"
      minOccurs="0"
     />
    </xs:sequence>
    <xs:attribute name="Traversal"
      type="t:ItemQueryTraversalType" use="required"
     />
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

The following table lists the child elements of the **FindItemType** complex type

Element	Type	Description
ItemShape	**t:ItemResponseShapeType** ([MS-OXWSCDATA] section 2.2.4.42)	Specifies the array of items that are returned by the query.
IndexedPageItemView	**t:IndexedPageViewType** (section 2.2.4.16)	Specifies how paged item information is returned in the response.
FractionalPageItemView	**t:FractionalPageViewType** (section 2.2.4.14)	Specifies the starting item and number of items to return by the query.
CalendarView	**t:CalendarViewType** ([MS-OXWSMTGS] section 2.2.4.9)	Specifies the settings that are used to return calendar items as they appear in a calendar.
ContactsView	**t:ContactsViewType** ([MS-OXWSCONT] section 3.1.4.1.1.7)	Specifies the settings that are used to return contact items based on their alphabetical display names.
GroupBy	**t:GroupByType** (section 3.1.4.2.3.7)	Specifies the grouping for items that are returned by a query.
DistinguishedGroupBy	**t:DistinguishedGroupByType** (section	Specifies a standard grouping.

Element	Type	Description
	3.1.4.2.3.5)	
Restriction	t:RestrictionType (section 2.2.4.30)	Specifies a search restriction or query.
SortOrder	t:NonEmptyArrayOfFieldOrdersType (section 3.1.4.2.3.8)	Specifies one or more **FieldOrderType** complex type (section 3.1.4.2.3.6) elements that specify how the results should be sorted.
ParentFolderIds	t:NonEmptyArrayOfBaseFolderIdsType ([MS-OXWSFOLD] section 3.1.4.6.3.3)	Specifies one or more folders that are the root of the search.
QueryString<18>	m:QueryStringType (section 2.2.4.29)	Specifies the query that is used for the search.

The following table lists the attribute that is defined for the **FindItemType** complex type.

Attribute	Type	Description
Traversal	t:ItemQueryTraversalType (section 2.2.5.7)	Specifies whether the search finds items in folders or in the **Deleted Items folder**.

The **FindItemType** complex type specifies the search criteria to find a set of items by using the **FindItem** operation as well as the structure of the response.

One of the following elements can be included in the request to specify how the returned items are viewed.

- **IndexedPageItemView**

- **FractionalPageItemView**

- **CalendarView**

- **ContactsView**

One of the following elements can be included in the request to specify how the results, if any, are to be grouped:

- **GroupBy**

- **DistinguishedGroupBy**

When the subelement **BaseShape** of the **ItemShape** element is set to "AllProperties" or "Default", the properties that are returned by the **FindItem** operation depend on the folder that is searched for the items. The properties that are returned are defined by the complex type element or combination of complex type elements that represent the item stored in the folder, as shown in the following table.<19>

Folder	Complex type
Calendar	**CalendarItemType** ([MS-OXWSMTGS] section 2.2.4.6).
Contacts	**ContactItemType** ([MS-OXWSCONT] section 2.2.4.3). **DistributionListType** ([MS-OXWSDLIST] section 2.2.4.1).
Folder	**MessageType** ([MS-OXWSMSG] section 2.2.4.3).

Folder	Complex type
	PostItemType ([MS-OXWSPOST] section 2.2.4.1). **MeetingCancellationMessageType** ([MS-OXWSMTGS] section 2.2.4.14). **MeetingMessageType** ([MS-OXWSMTGS] section 2.2.4.15). **MeetingRequestMessageType** ([MS-OXWSMTGS] section 2.2.4.17). **MeetingResponseMessageType** ([MS-OXWSMTGS] section 2.2.4.18).
Search	**CalendarItemType** ([MS-OXWSMTGS] section 2.2.4.6). **ContactItemType** ([MS-OXWSCONT] section 2.2.4.3). **DistributionListType** ([MS-OXWSDLIST] section 2.2.4.1). **MessageType** ([MS-OXWSMSG] section 2.2.4.3). **PostItemType** ([MS-OXWSPOST] section 2.2.4.1). **MeetingCancellationMessageType** ([MS-OXWSMTGS] section 2.2.4.14). **MeetingMessageType** ([MS-OXWSMTGS] section 2.2.4.15). **MeetingRequestMessageType** ([MS-OXWSMTGS] section 2.2.4.17). **MeetingResponseMessageType** ([MS-OXWSMTGS] section 2.2.4.18). **TaskType** ([MS-OXWSTASK] section 2.2.4.6).
Tasks	**TaskType** ([MS-OXWSTASK] section 2.2.4.6).

3.1.4.2.3.3   t:AggregateOnType Complex Type

The **AggregateOnType** complex type specifies the property that is used to determine the order of grouped items for a grouped result set. When an **AggregateOnType** complex type element is specified, one of the following child elements MUST be specified:

- **FieldURI**

- **IndexedFieldURI**

- **ExtendedFieldURI**

```
<xs:complexType name="AggregateOnType">
  <xs:choice>
    <xs:element name="FieldURI"
      type="t:PathToUnindexedFieldType"
     />
    <xs:element name="IndexedFieldURI"
      type="t:PathToIndexedFieldType"
     />
    <xs:element name="ExtendedFieldURI"
      type="t:PathToExtendedFieldType"
     />
  </xs:choice>
  <xs:attribute name="Aggregate"
    type="t:AggregateType"
    use="required"
   />
</xs:complexType>
```

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

Element	Type	Description
FieldURI	**t:PathToUnindexedFieldType** ([MS-OXWSCDATA] section 2.2.4.55)	Specifies a well-known **message store** property that is used to group the items.
IndexedFieldURI	**t:PathToIndexedFieldType** ([MS-OXWSCDATA] section 2.2.4.54)	Specifies an individual member of a dictionary that is used to group the items.
ExtendedFieldURI	**t:PathToExtendedFieldType** ([MS-OXWSXPROP] section 2.1.6)	Specifies an extended property that is used to group the items.

The following table lists the attribute that is defined for the **AggregateOnType** complex type.

Attribute	Type	Description
Aggregate	**t:AggregateType** (section 3.1.4.2.4.1)	Specifies the value that indicates whether the maximum or minimum value of the property specified is used for ordering a group of items. This attribute MUST be set.

3.1.4.2.3.4   t:BaseGroupByType Complex Type

The **BaseGroupByType** complex type specifies the base class for derived complex types that specify grouped queries to the **FindItem** operation, as specified in section 3.1.4.2.

```
<xs:complexType name="BaseGroupByType"  abstract="true"
>
  <xs:attribute name="Order"
    type="t:SortDirectionType" use="required"
   />
</xs:complexType>
```

The following table lists the attribute that is defined for the **BaseGroupByType** complex type.

Attribute	Type	Description
Order	**t:SortDirectionType** (section 3.1.4.2.4.2)	Specifies the sort order of the returned grouped items. This attribute MUST be specified.

3.1.4.2.3.5   t:DistinguishedGroupByType Complex Type

The **DistinguishedGroupByType** complex type specifies a standard grouping for the **FindItem** operation. The **DistinguishedGroupByType** complex type extends the **BaseGroupByType** complex type, as specified in section 3.1.4.2.3.4.

```
<xs:complexType name="DistinguishedGroupByType">
  <xs:complexContent>
    <xs:extension
      base="t:BaseGroupByType"
    >
      <xs:sequence>
        <xs:element name="StandardGroupBy"
          type="t:StandardGroupByType"
         />
```

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

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

Element	Type	Description
StandardGroupBy	**t:StandardGroupByType** (section 3.1.4.2.4.3)	Specifies one of the standard groupings for returned items.

3.1.4.2.3.6   t:FieldOrderType Complex Type

The **FieldOrderType** complex type specifies a single field by which to sort results and specifies the direction of the sort.

```
    <xs:complexType name="FieldOrderType">
      <xs:sequence>
        <xs:element
          ref="t:Path"
        />
      </xs:sequence>
      <xs:attribute name="Order"
        type="t:SortDirectionType" use="required"
      />
    </xs:complexType>
```

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

Element	Type	Description
Path	**t:Path** ([MS-OXWSCDATA] section 2.2.3.8)	Specifies the **URI** that describes the field by which the results are sorted.

The following table lists the attribute that is defined for the **FieldOrderType** complex type.

Attribute	Type	Description
Order	**t:SortDirectionType** (section 3.1.4.2.4.2)	Specifies the direction of the sort. This attribute MUST be specified.

3.1.4.2.3.7   t:GroupByType Complex Type

The **GroupByType** complex type specifies the grouping for items that are returned by the **FindItem** operation. The **GroupByType** complex type extends the **BaseGroupByType** complex type, as specified in section 3.1.4.2.3.4.

```
    <xs:complexType name="GroupByType">
      <xs:complexContent>
        <xs:extension
          base="t:BaseGroupByType"
```

```
        >
          <xs:sequence>
            <xs:choice>
              <xs:element name="FieldURI"
                type="t:PathToUnindexedFieldType"
                />
              <xs:element name="IndexedFieldURI"
                type="t:PathToIndexedFieldType"
                />
              <xs:element name="ExtendedFieldURI"
                type="t:PathToExtendedFieldType"
                />
            </xs:choice>
            <xs:element name="AggregateOn"
              type="t:AggregateOnType"
              />
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
```

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

Element	Type	Description
FieldURI	**t:PathToUnindexedFieldType** ([MS-OXWSCDATA] section 2.2.4.55)	Specifies the **URI** to an unindexed item property.
IndexedFieldURI	**t:PathToIndexedFieldType** ([MS-OXWSCDATA] section 2.2.4.54)	Specifies the URI to an indexed item property.
ExtendedFieldURI	**t:PathToExtendedFieldType** ([MS-OXWSXPROP] section 2.1.6)	Specifies an extended item property.
AggregateOn	**t:AggregateOnType** (section 3.1.4.2.3.3)	Specifies the item property that is used to determine the order of groups in a response.

3.1.4.2.3.8   t:NonEmptyArrayOfFieldOrdersType Complex Type

The **NonEmptyArrayOfFieldOrdersType** complex type specifies an array of **FieldOrderType** complex type, as specified in section 3.1.4.2.3.6, elements that contains at least one member.

```
    <xs:complexType name="NonEmptyArrayOfFieldOrdersType">
      <xs:sequence>
        <xs:element name="FieldOrder"
          type="t:FieldOrderType"
          maxOccurs="unbounded"
          />
      </xs:sequence>
    </xs:complexType>
```

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

Element	Type	Description
FieldOrder	**t:FieldOrderType** (section 3.1.4.2.3.6)	Specifies a **FieldOrderType** complex type.

3.1.4.2.4 Simple Types

The following **XML schema** simple type definitions are specific to this operation.

Simple type	Description
AggregateType	Specifies the maximum or minimum value used to order items in a group.
SortDirectionType	Specifies the ordering options for a group.
StandardGroupByType	Specifies standard grouping and aggregating mechanisms.

3.1.4.2.4.1   t:AggregateType Simple Type

The **AggregateType** simple type specifies whether the maximum or minimum value of a representative property is used to order the items in a group that is returned by the **FindItem** operation.

```
<xs:simpleType name="AggregateType">
  <xs:restriction
    base="xs:string"
  >
    <xs:enumeration
      value="Minimum"
     />
    <xs:enumeration
      value="Maximum"
     />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **AggregateType** simple type.

Value	Meaning
Maximum	Specifies that the groups are sorted starting with the maximum value for a specified aggregation property.
Minimum	Specifies that the groups are sorted starting with the minimum value for a specified aggregation property.

3.1.4.2.4.2   t:SortDirectionType Simple Type

The **SortDirectionType** simple type specifies the ordering options for the groups in the grouped item array that is returned in the response.

```
<xs:simpleType name="SortDirectionType">
  <xs:restriction base="xs:string">
    <xs:enumeration
      value="Ascending"
     />
    <xs:enumeration
```

```
      value="Descending"
    />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the values that are defined by the **SortDirectionType** simple type.

Value	Meaning
Ascending	Specifies that the items are sorted in ascending order.
Descending	Specifies that the items are sorted in descending order.

3.1.4.2.4.3   t:StandardGroupByType Simple Type

The **StandardGroupByType** simple type specifies the standard grouping and aggregating mechanisms for a grouped response to the **FindItem** operation.

```
<xs:simpleType name="StandardGroupByType">
  <xs:restriction base="xs:string">
    <xs:enumeration
      value="ConversationTopic"
    />
  </xs:restriction>
</xs:simpleType>
```

The following table lists the value that is defined by the **StandardGroupByType** simple type.

Value	Meaning
ConversationTopic	Specifies that results are grouped by the conversation topic and aggregated on the date and time at which the item was received.

3.1.5 Timer Events

None.

3.1.6 Other Local Events

None.

4 Protocol Examples

Example XML for FindFolders operation.

```
Request XML:
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Header>
    <t:RequestServerVersion Version="Exchange2013" />
  </soap:Header>
  <soap:Body>
    <m:FindFolder Traversal="Deep">
      <m:FolderShape>
        <t:BaseShape>IdOnly</t:BaseShape>
        <t:AdditionalProperties>
          <t:FieldURI FieldURI="folder:DisplayName" />
        </t:AdditionalProperties>
      </m:FolderShape>
      <m:IndexedPageFolderView MaxEntriesReturned="10" Offset="0" BasePoint="Beginning" />
      <m:Restriction>
        <t:And>
          <t:Contains ContainmentMode="Substring" ContainmentComparison="IgnoreCase">
            <t:FieldURI FieldURI="folder:DisplayName" />
            <t:Constant Value="value1" />
          </t:Contains>
          <t:Contains ContainmentMode="Prefixed" ContainmentComparison="IgnoreCase">
            <t:FieldURI FieldURI="folder:FolderClass" />
            <t:Constant Value="IPF.Note" />
          </t:Contains>
          <t:IsGreaterThan>
            <t:FieldURI FieldURI="folder:TotalCount" />
            <t:FieldURIOrConstant>
              <t:Constant Value="0" />
            </t:FieldURIOrConstant>
          </t:IsGreaterThan>
        </t:And>
      </m:Restriction>
      <m:ParentFolderIds>
        <t:DistinguishedFolderId Id="root" />
      </m:ParentFolderIds>
    </m:FindFolder>
  </soap:Body>
</soap:Envelope>

Response XML:
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header><h:ServerVersionInfo MajorVersion="15" MinorVersion="1" MajorBuildNumber="31"
MinorBuildNumber="0" Version="V2_27"
xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns="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 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <m:FindFolderResponse
xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types">
      <m:ResponseMessages>
        <m:FindFolderResponseMessage ResponseClass="Success">
          <m:ResponseCode>
            NoError
          </m:ResponseCode>
          <m:RootFolder IndexedPagingOffset="1" TotalItemsInView="1"
IncludesLastItemInRange="true">
              <t:Folders>
                <t:Folder>
```

```
                  <t:FolderId Id="AAMkADNkNzE5Nzg3LTRlN"
ChangeKey="AQAAABQAAAAWi/oZ5g6xAMTqA=="/>
                      <t:DisplayName>
                        E15 Dogfood
                      </t:DisplayName>
                  </t:Folder>
                </t:Folders>
              </m:RootFolder>
          </m:FindFolderResponseMessage>
        </m:ResponseMessages>
      </m:FindFolderResponse>
    </s:Body>
</s:Envelope>
```

Example XML for FindItem operation:

```
<soap:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
      xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
      xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/">
  <soap:Header>
    <t:RequestServerVersion Version="Exchange2010" />
  </soap:Header>
  <soap:Body>
    <m:FindItem Traversal="Shallow">
      <m:ItemShape>
        <t:BaseShape>IdOnly</t:BaseShape>
        <t:AdditionalProperties>
          <t:FieldURI FieldURI="item:Subject" />
          <t:FieldURI FieldURI="item:DateTimeReceived" />
          <t:FieldURI FieldURI="message:Sender" />
        </t:AdditionalProperties>
      </m:ItemShape>
      <m:IndexedPageItemView MaxEntriesReturned="10" Offset="0" BasePoint="Beginning" />
      <m:GroupBy Order="Descending">
        <t:FieldURI FieldURI="item:Subject" />
        <t:AggregateOn Aggregate="Maximum">
          <t:FieldURI FieldURI="item:DateTimeReceived" />
        </t:AggregateOn>
      </m:GroupBy>
      <m:Restriction>
        <t:IsEqualTo>
          <t:FieldURI FieldURI="item:ItemClass" />
          <t:FieldURIOrConstant>
            <t:Constant Value="IPM.Note" />
          </t:FieldURIOrConstant>
        </t:IsEqualTo>
      </m:Restriction>
      <m:SortOrder>
        <t:FieldOrder Order="Ascending">
          <t:FieldURI FieldURI="item:DateTimeReceived" />
        </t:FieldOrder>
      </m:SortOrder>
      <m:ParentFolderIds>
        <t:DistinguishedFolderId Id="inbox" />
      </m:ParentFolderIds>
    </m:FindItem>
  </soap:Body>
</soap:Envelope>
```

Following example shows the XML that is returned with **FindItems** operation. The **ItemId** and **ChangeKey** attributes have been shortened to preserve readability. In this example, there are three groups in this 10-item response.

```
<s:Envelope xmlns:s="http://schemas.xmlsoap.org/soap/envelope/">
  <s:Header>
    <h:ServerVersionInfo MajorVersion="14"
        MinorVersion="0"
        MajorBuildNumber="639"
        MinorBuildNumber="20"
        Version="Exchange2010"
        xmlns:h="http://schemas.microsoft.com/exchange/services/2006/types"
        xmlns="http://schemas.microsoft.com/exchange/services/2006/types"
        xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema" />
  </s:Header>
  <s:Body xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xmlns:xsd="http://www.w3.org/2001/XMLSchema">
    <m:FindItemResponse
xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
        xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types">
      <m:ResponseMessages>
        <m:FindItemResponseMessage ResponseClass="Success">
          <m:ResponseCode>NoError</m:ResponseCode>
          <m:RootFolder IndexedPagingOffset="13" TotalItemsInView="26"
IncludesLastItemInRange="false">
            <t:Groups>
              <t:GroupedItems>
                <t:GroupIndex>Testing</t:GroupIndex>
                <t:Items>
                  <t:Message>
                    <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
                    <t:Subject>Testing</t:Subject>
                    <t:DateTimeReceived>2009-10-14T16:31:42Z</t:DateTimeReceived>
                    <t:Sender>
                      <t:Mailbox>
                        <t:Name>E14UserTwo</t:Name>
                        <t:MailboxType>OneOff</t:MailboxType>
                      </t:Mailbox>
                    </t:Sender>
                  </t:Message>
                  <t:Message>
                    <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
                    <t:Subject>Testing</t:Subject>
                    <t:DateTimeReceived>2009-10-14T16:31:50Z</t:DateTimeReceived>
                    <t:Sender>
                      <t:Mailbox>
                        <t:Name>E14UserTwo</t:Name>
                        <t:MailboxType>OneOff</t:MailboxType>
                      </t:Mailbox>
                    </t:Sender>
                  </t:Message>
                  <t:Message>
                    <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
                    <t:Subject>Testing</t:Subject>
                    <t:DateTimeReceived>2009-10-14T19:44:25Z</t:DateTimeReceived>
                    <t:Sender>
                      <t:Mailbox>
                        <t:Name>E14UserOne</t:Name>
                        <t:MailboxType>OneOff</t:MailboxType>
                      </t:Mailbox>
                    </t:Sender>
                  </t:Message>
                  <t:Message>
                    <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
                    <t:Subject>Testing</t:Subject>
                    <t:DateTimeReceived>2009-10-14T19:45:02Z</t:DateTimeReceived>
                    <t:Sender>
                      <t:Mailbox>
                        <t:Name>E14UserOne</t:Name>
                        <t:MailboxType>OneOff</t:MailboxType>
                      </t:Mailbox>
                    </t:Sender>
```

```
          </t:Message>
          <t:Message>
            <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
            <t:Subject>Testing</t:Subject>
            <t:DateTimeReceived>2009-10-14T19:48:02Z</t:DateTimeReceived>
            <t:Sender>
              <t:Mailbox>
                <t:Name>E14UserOne</t:Name>
                <t:MailboxType>OneOff</t:MailboxType>
              </t:Mailbox>
            </t:Sender>
          </t:Message>
          <t:Message>
            <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
            <t:Subject>Testing</t:Subject>
            <t:DateTimeReceived>2009-10-14T19:48:23Z</t:DateTimeReceived>
            <t:Sender>
              <t:Mailbox>
                <t:Name>E14UserOne</t:Name>
                <t:MailboxType>OneOff</t:MailboxType>
              </t:Mailbox>
            </t:Sender>
          </t:Message>
        </t:Items>
      </t:GroupedItems>
      <t:GroupedItems>
        <t:GroupIndex>Over there</t:GroupIndex>
        <t:Items>
          <t:Message>
            <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
            <t:Subject>Over there</t:Subject>
            <t:DateTimeReceived>2009-10-14T19:43:34Z</t:DateTimeReceived>
            <t:Sender>
              <t:Mailbox>
                <t:Name>E14UserOne</t:Name>
                <t:MailboxType>OneOff</t:MailboxType>
              </t:Mailbox>
            </t:Sender>
          </t:Message>
          <t:Message>
            <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
            <t:Subject>Over there</t:Subject>
            <t:DateTimeReceived>2009-10-14T19:45:47Z</t:DateTimeReceived>
            <t:Sender>
              <t:Mailbox>
                <t:Name>E14UserTwo</t:Name>
                <t:MailboxType>OneOff</t:MailboxType>
              </t:Mailbox>
            </t:Sender>
          </t:Message>
        </t:Items>
      </t:GroupedItems>
      <t:GroupedItems>
        <t:GroupIndex>Interesting</t:GroupIndex>
        <t:Items>
          <t:Message>
            <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
            <t:Subject>Interesting</t:Subject>
            <t:DateTimeReceived>2009-10-02T22:02:18Z</t:DateTimeReceived>
            <t:Sender>
              <t:Mailbox>
                <t:Name>E14UserTwo</t:Name>
                <t:MailboxType>OneOff</t:MailboxType>
              </t:Mailbox>
            </t:Sender>
          </t:Message>
          <t:Message>
            <t:ItemId Id="AQMkAGEyYzQ" ChangeKey="CQAAABYAAA" />
            <t:Subject>Interesting</t:Subject>
```

```
                  <t:DateTimeReceived>2009-10-05T20:10:11Z</t:DateTimeReceived>
                  <t:Sender>
                    <t:Mailbox>
                      <t:Name>E14UserTwo</t:Name>
                      <t:MailboxType>OneOff</t:MailboxType>
                    </t:Mailbox>
                  </t:Sender>
                </t:Message>
              </t:Items>
            </t:GroupedItems>
          </t:Groups>
        </m:RootFolder>
      </m:FindItemResponseMessage>
    </m:ResponseMessages>
  </m:FindItemResponse>
  </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. The contents of each file are included in this section.

File name	Description	Section
MS-OXWSSRCH.wsdl	Contains the WSDL for the implementation of this protocol.	6
MS-OXWSSRCH-messages.xsd	Contains the XML schema message definitions that are used in this protocol.	7.1
MS-OXWSSRCH-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-OXWSSRCH-types.xsd or MS-OXWSSRCH-messages.xsd schemas have to be placed in the common folder along with the files.

This section contains the contents of the MS-OXWSSRCH.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:s="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:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:tns="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"
xmlns="http://schemas.microsoft.com/exchange/services/2006/messages">
      <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"/>
      <xs:include schemaLocation="MS-OXWSSRCH-messages.xsd" />
      <xs:include schemaLocation="MS-OXWSCDATA-messages.xsd" />

    </xs:schema>
    <xs:schema id="types" elementFormDefault="qualified" version="Exchange2016"
xmlns:t="http://schemas.microsoft.com/exchange/services/2006/types"
targetNamespace="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns="http://schemas.microsoft.com/exchange/services/2006/types"
xmlns:xs="http://www.w3.org/2001/XMLSchema">
      <xs:import namespace="http://www.w3.org/XML/1998/namespace"/>

    </xs:schema>
  </wsdl:types>
  <wsdl:message name="FindItemSoapIn">
      <wsdl:part name="request" element="tns:FindItem"/>
      <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
      <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
      <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
      <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
       <wsdl:part name="DateTimePrecision" element="t:DateTimePrecision" />
       <wsdl:part name="ManagementRole" element="t:ManagementRole" />
  </wsdl:message>
  <wsdl:message name="FindItemSoapOut">
      <wsdl:part name="FindItemResult" element="tns:FindItemResponse"/>
      <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
  </wsdl:message>
  <wsdl:message name="FindFolderSoapIn">
      <wsdl:part name="request" element="tns:FindFolder"/>
      <wsdl:part name="Impersonation" element="t:ExchangeImpersonation"/>
```

```
                <wsdl:part name="MailboxCulture" element="t:MailboxCulture"/>
                <wsdl:part name="RequestVersion" element="t:RequestServerVersion"/>
                <wsdl:part name="TimeZoneContext" element="t:TimeZoneContext"/>
                <wsdl:part name="ManagementRole" element="t:ManagementRole" />
        </wsdl:message>
        <wsdl:message name="FindFolderSoapOut">
                <wsdl:part name="FindFolderResult" element="tns:FindFolderResponse"/>
                <wsdl:part name="ServerVersion" element="t:ServerVersionInfo"/>
        </wsdl:message>
    <wsdl:portType name="ExchangeServicePortType">
            <wsdl:operation name="FindFolder">
                <wsdl:input message="tns:FindFolderSoapIn"/>
                <wsdl:output message="tns:FindFolderSoapOut"/>
            </wsdl:operation>
            <wsdl:operation name="FindItem">
                <wsdl:input message="tns:FindItemSoapIn"/>
                <wsdl:output message="tns:FindItemSoapOut"/>
            </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="FindFolder">
                <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/FindFolder"/>
                <wsdl:input>
                    <soap:header message="tns:FindFolderSoapIn" part="Impersonation"
use="literal"/>
                    <soap:header message="tns:FindFolderSoapIn" part="MailboxCulture"
use="literal"/>
                    <soap:header message="tns:FindFolderSoapIn" part="RequestVersion"
use="literal"/>
                    <soap:header message="tns:FindFolderSoapIn" part="TimeZoneContext"
use="literal"/>
                    <soap:header message="tns:FindFolderSoapIn" part="ManagementRole"
use="literal"/>
                    <soap:body parts="request" use="literal" />
                </wsdl:input>
                <wsdl:output>
                    <soap:body parts="FindFolderResult" use="literal" />
                    <soap:header message="tns:FindFolderSoapOut" part="ServerVersion"
use="literal"/>
                </wsdl:output>
        </wsdl:operation>
        <wsdl:operation name="FindItem">
                <soap:operation
soapAction="http://schemas.microsoft.com/exchange/services/2006/messages/FindItem"/>
                <wsdl:input>
                    <soap:header message="tns:FindItemSoapIn" part="Impersonation"
use="literal"/>
                    <soap:header message="tns:FindItemSoapIn" part="MailboxCulture"
use="literal"/>
                    <soap:header message="tns:FindItemSoapIn" part="RequestVersion"
use="literal"/>
                    <soap:header message="tns:FindItemSoapIn" part="TimeZoneContext"
use="literal"/>
                    <soap:header message="tns:FindItemSoapIn" part="DateTimePrecision"
use="literal" />
                    <soap:header message="tns:FindItemSoapIn" part="ManagementRole"
use="literal"/>
                    <soap:body parts="request" use="literal" />
                </wsdl:input>
                <wsdl:output>
                    <soap:body parts="FindItemResult" use="literal" />
                    <soap:header message="tns:FindItemSoapOut" part="ServerVersion"
use="literal"/>
```

```
            </wsdl:output>
        </wsdl:operation>

    </wsdl:binding>
</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-OXWSSRCH-types.xsd or MS-OXWSSRCH-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 provides the contents of the MS-OXWSSRCH-messages.xsd file and information about additional files that this schema file requires to operate correctly.

MS-OXWSSRCH-messages.xsd includes or imports the files listed in the following table. For the schema file to operate correctly, these files have to be present in the folder that contains the WSDL, types schema, and messages schema files for this protocol.

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

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:m="http://schemas.microsoft.com/exchange/services/2006/messages"
xmlns:tns="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">
    <!--    CHANGE THE SCHEMA LOCATION TO REFLECT THE TYPES XSD ASSOCIATED WITH THIS DOCUMENT
    <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="types.xsd"/>
    <xs:include/>
-->
    <xs:import namespace="http://schemas.microsoft.com/exchange/services/2006/types"
schemaLocation="MS-OXWSSRCH-types.xsd"/>
    <xs:include schemaLocation="MS-OXWSCDATA-messages.xsd"/>
    <xs:complexType name="FindFolderType">
        <xs:complexContent>
            <xs:extension base="m:BaseRequestType">
                <xs:sequence>
                    <xs:element name="FolderShape" type="t:FolderResponseShapeType"/>
                    <xs:choice minOccurs="0">
                        <xs:element name="IndexedPageFolderView"
type="t:IndexedPageViewType"/>
                        <xs:element name="FractionalPageFolderView"
type="t:FractionalPageViewType"/>
                    </xs:choice>
                    <xs:element name="Restriction" type="t:RestrictionType" minOccurs="0"/>
                    <xs:element name="ParentFolderIds"
type="t:NonEmptyArrayOfBaseFolderIdsType"/>
                </xs:sequence>
                <xs:attribute name="Traversal" type="t:FolderQueryTraversalType"
use="required"/>
            </xs:extension>
```

```
                </xs:complexContent>
        </xs:complexType>
        <xs:element name="FindFolder" type="m:FindFolderType"/>
        <xs:complexType name="FindFolderResponseMessageType">
            <xs:complexContent>
                <xs:extension base="m:ResponseMessageType">
                    <xs:sequence>
                        <xs:element name="RootFolder" type="t:FindFolderParentType"
    minOccurs="0"/>
                    </xs:sequence>
                </xs:extension>
            </xs:complexContent>
        </xs:complexType>
        <xs:complexType name="FindFolderResponseType">
            <xs:complexContent>
                <xs:extension base="m:BaseResponseMessageType"/>
            </xs:complexContent>
        </xs:complexType>
        <xs:element name="FindFolderResponse" type="m:FindFolderResponseType"/>
        <xs:complexType name="FindItemType">
            <xs:complexContent>
                <xs:extension base="m:BaseRequestType">
                    <xs:sequence>
                        <xs:element name="ItemShape" type="t:ItemResponseShapeType"/>
                        <xs:choice minOccurs="0">
                            <xs:element name="IndexedPageItemView" type="t:IndexedPageViewType"/>
                            <xs:element name="FractionalPageItemView"
    type="t:FractionalPageViewType"/>
                            <xs:element name="SeekToConditionPageItemView"
    type="t:SeekToConditionPageViewType"/>
                            <xs:element name="CalendarView" type="t:CalendarViewType"/>
                            <xs:element name="ContactsView" type="t:ContactsViewType"/>
                        </xs:choice>
                        <xs:choice minOccurs="0">
                            <xs:element name="GroupBy" type="t:GroupByType"/>
                            <xs:element name="DistinguishedGroupBy"
    type="t:DistinguishedGroupByType"/>
                        </xs:choice>
                        <xs:element name="Restriction" type="t:RestrictionType" minOccurs="0"/>
                        <xs:element name="SortOrder" type="t:NonEmptyArrayOfFieldOrdersType"
    minOccurs="0"/>
                        <xs:element name="ParentFolderIds"
    type="t:NonEmptyArrayOfBaseFolderIdsType"/>
                        <xs:element name="QueryString" type="m:QueryStringType" minOccurs="0"
    maxOccurs="1"/>
                    </xs:sequence>
                    <xs:attribute name="Traversal" type="t:ItemQueryTraversalType"
    use="required"/>
                </xs:extension>
            </xs:complexContent>
        </xs:complexType>
        <xs:element name="FindItem" type="m:FindItemType"/>
        <xs:complexType name="FindItemResponseMessageType">
            <xs:complexContent>
                <xs:extension base="m:ResponseMessageType">
                    <xs:sequence>
                        <xs:element name="RootFolder" type="t:FindItemParentType" minOccurs="0"/>
                        <xs:element name="HighlightTerms" type="t:ArrayOfHighlightTermsType"
    minOccurs="0"/>
                    </xs:sequence>
                </xs:extension>
            </xs:complexContent>
        </xs:complexType>
        <xs:complexType name="FindItemResponseType">
            <xs:complexContent>
                <xs:extension base="m:BaseResponseMessageType"/>
            </xs:complexContent>
        </xs:complexType>
        <xs:element name="FindItemResponse" type="m:FindItemResponseType"/>
```

```
        <xs:complexType name="QueryStringType">
            <xs:simpleContent>
                <xs:extension base="xs:string">
                    <xs:attribute name="ResetCache" type="xs:boolean" use="optional"/>
                    <xs:attribute name="ReturnHighlightTerms" type="xs:boolean" use="optional"/>
                    <xs:attribute name="ReturnDeletedItems" type="xs:boolean" use="optional"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
        <xs:complexType name="PerformInstantSearchRequest">
          <xs:complexContent>
            <xs:extension base="m:BaseRequestType">
              <xs:sequence>
                <xs:element name="SearchSessionId" type="xs:string" minOccurs="1" maxOccurs="1"/>
                <xs:element name="ItemType" type="t:InstantSearchItemType" minOccurs="1"
maxOccurs="1"/>
                <xs:element name="QueryOptions" type="t:QueryOptionsType" minOccurs="1"
maxOccurs="1"/>
                <xs:element name="SearchRequestId" type="xs:long" minOccurs="1" maxOccurs="1"/>
                <xs:element name="KqlQuery" type="xs:string" minOccurs="1" maxOccurs="1"/>
                <xs:element name="FolderScope" type="t:ArrayOfFolderIdType" minOccurs="1"
maxOccurs="1"/>
                <xs:element name="IsDeepTraversal" type="xs:boolean" minOccurs="0"
maxOccurs="1"/>
                <xs:element name="WaitOnSearchResults" type="xs:boolean" minOccurs="0"
maxOccurs="1"/>
              </xs:sequence>
            </xs:extension>
          </xs:complexContent>
        </xs:complexType>
        <xs:element name="PerformInstantSearch" type="m:PerformInstantSearchRequest"/>
        <xs:complexType name="PerformInstantSearchResponse">
          <xs:complexContent>
            <xs:extension base="m:ResponseMessageType">
              <xs:sequence>
                <xs:element name="Payload" type="t:InstantSearchPayloadType" minOccurs="0"
maxOccurs="1"/>
              </xs:sequence>
            </xs:extension>
          </xs:complexContent>
        </xs:complexType>
        <xs:element name="PerformInstantSearchResponse" type="m:PerformInstantSearchResponse"/>
</xs:schema>
```

7.2   Types Schema

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

MS-OXWSSRCH-types.xsd includes the file listed in the following table. For the schema file 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

```
    <?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:import namespace="http://www.w3.org/XML/1998/namespace"/>
```

```
<xs:include schemaLocation="MS-OXWSCDATA-types.xsd"/>
<xs:include schemaLocation="MS-OXWSCONV-types.xsd"/>
<xs:complexType name="AggregateOnType">
  <xs:choice>
    <xs:element name="FieldURI" type="t:PathToUnindexedFieldType"/>
    <xs:element name="IndexedFieldURI" type="t:PathToIndexedFieldType"/>
    <xs:element name="ExtendedFieldURI" type="t:PathToExtendedFieldType"/>
  </xs:choice>
  <xs:attribute name="Aggregate" type="t:AggregateType" use="required"/>
</xs:complexType>
<xs:simpleType name="AggregateType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Minimum"/>
    <xs:enumeration value="Maximum"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="AndType">
  <xs:complexContent>
    <xs:extension base="t:MultipleOperandBooleanExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="And" type="t:AndType" substitutionGroup="t:SearchExpression"/>
<xs:complexType name="ArrayOfCalendarItemsType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="CalendarItem" type="t:CalendarItemType"/>
  </xs:choice>
</xs:complexType>
<xs:complexType name="ArrayOfGroupedItemsType">
  <xs:choice>
    <xs:element name="GroupedItems" type="t:GroupedItemsType" minOccurs="0"
maxOccurs="unbounded"/>
  </xs:choice>
</xs:complexType>
<xs:complexType name="ArrayOfItemsType">
  <xs:choice minOccurs="0" maxOccurs="unbounded">
    <xs:element name="Item" type="t:ItemType"/>
  </xs:choice>
</xs:complexType>
<xs:complexType name="BaseGroupByType" abstract="true">
  <xs:attribute name="Order" type="t:SortDirectionType" use="required"/>
</xs:complexType>
<xs:complexType name="BasePagingType" abstract="true">
  <xs:attribute name="MaxEntriesReturned" type="xs:int" use="optional"/>
</xs:complexType>
<xs:simpleType name="ContainmentModeType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="FullString"/>
    <xs:enumeration value="Prefixed"/>
    <xs:enumeration value="Substring"/>
    <xs:enumeration value="PrefixOnWords"/>
    <xs:enumeration value="ExactPhrase"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="ContainmentComparisonType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Exact"/>
    <xs:enumeration value="IgnoreCase"/>
    <xs:enumeration value="IgnoreNonSpacingCharacters"/>
    <xs:enumeration value="Loose"/>
    <xs:enumeration value="IgnoreCaseAndNonSpacingCharacters"/>
    <xs:enumeration value="LooseAndIgnoreCase"/>
    <xs:enumeration value="LooseAndIgnoreNonSpace"/>
    <xs:enumeration value="LooseAndIgnoreCaseAndIgnoreNonSpace"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="ContainsExpressionType">
  <xs:complexContent>
    <xs:extension base="t:SearchExpressionType">
      <xs:sequence>
```

```
          <xs:element ref="t:Path"/>
          <xs:element name="Constant" type="t:ConstantValueType"/>
        </xs:sequence>
        <xs:attribute name="ContainmentMode" type="t:ContainmentModeType" use="optional"/>
        <xs:attribute name="ContainmentComparison" type="t:ContainmentComparisonType"
use="optional"/>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="Contains" type="t:ContainsExpressionType"
substitutionGroup="t:SearchExpression"/>
  <xs:complexType name="DistinguishedGroupByType">
    <xs:complexContent>
      <xs:extension base="t:BaseGroupByType">
        <xs:sequence>
          <xs:element name="StandardGroupBy" type="t:StandardGroupByType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:complexType name="ExcludesValueType">
    <xs:attribute name="Value" type="t:ExcludesAttributeType" use="required"/>
  </xs:complexType>
  <xs:complexType name="ExcludesType">
    <xs:complexContent>
      <xs:extension base="t:SearchExpressionType">
        <xs:sequence>
          <xs:element ref="t:Path"/>
          <xs:element name="Bitmask" type="t:ExcludesValueType"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="Excludes" type="t:ExcludesType" substitutionGroup="t:SearchExpression"/>
  <xs:complexType name="ExistsType">
    <xs:complexContent>
      <xs:extension base="t:SearchExpressionType">
        <xs:sequence>
          <xs:element ref="t:Path"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="Exists" type="t:ExistsType" substitutionGroup="t:SearchExpression"/>
  <xs:complexType name="FieldOrderType">
    <xs:sequence>
      <xs:element ref="t:Path"/>
    </xs:sequence>
    <xs:attribute name="Order" type="t:SortDirectionType" use="required"/>
  </xs:complexType>
  <xs:complexType name="FindFolderParentType">
    <xs:sequence>
      <xs:element name="Folders" type="t:ArrayOfFoldersType" minOccurs="0"/>
    </xs:sequence>
    <xs:attributeGroup ref="t:FindResponsePagingAttributes"/>
  </xs:complexType>
  <xs:complexType name="FindItemParentType">
    <xs:choice>
      <xs:element name="Items" type="t:ArrayOfRealItemsType"/>
      <xs:element name="Groups" type="t:ArrayOfGroupedItemsType"/>
    </xs:choice>
    <xs:attributeGroup ref="t:FindResponsePagingAttributes"/>
  </xs:complexType>
  <xs:simpleType name="FolderQueryTraversalType">
    <xs:restriction base="xs:string">
      <xs:enumeration value="Shallow"/>
      <xs:enumeration value="Deep"/>
      <xs:enumeration value="SoftDeleted"/>
    </xs:restriction>
```

```
      </xs:simpleType>
      <xs:complexType name="FractionalPageViewType">
        <xs:complexContent>
          <xs:extension base="t:BasePagingType">
            <xs:attribute name="Numerator" type="xs:int" use="required"/>
            <xs:attribute name="Denominator" type="xs:int" use="required"/>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="GroupByType">
        <xs:complexContent>
          <xs:extension base="t:BaseGroupByType">
            <xs:sequence>
              <xs:choice>
                <xs:element name="FieldURI" type="t:PathToUnindexedFieldType"/>
                <xs:element name="IndexedFieldURI" type="t:PathToIndexedFieldType"/>
                <xs:element name="ExtendedFieldURI" type="t:PathToExtendedFieldType"/>
              </xs:choice>
              <xs:element name="AggregateOn" type="t:AggregateOnType"/>
            </xs:sequence>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="GroupedItemsType">
        <xs:sequence>
          <xs:element name="GroupIndex" type="xs:string"/>
          <xs:element name="Items" type="t:ArrayOfRealItemsType"/>
        </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="IndexBasePointType">
        <xs:restriction base="xs:string">
          <xs:enumeration value="Beginning"/>
          <xs:enumeration value="End"/>
        </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="IndexedPageViewType">
        <xs:complexContent>
          <xs:extension base="t:BasePagingType">
            <xs:attribute name="Offset" type="xs:int" use="required"/>
            <xs:attribute name="BasePoint" type="t:IndexBasePointType" use="required"/>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
      <xs:simpleType name="InstantSearchItemType">
        <xs:list>
          <xs:simpleType>
            <xs:restriction base="xs:string">
              <xs:enumeration value="None"/>
              <xs:enumeration value="MailItem"/>
              <xs:enumeration value="MailConversation"/>
              <xs:enumeration value="CalendarItem"/>
              <xs:enumeration value="Persona"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:list>
      </xs:simpleType>
      <xs:complexType name="InstantSearchPayloadType">
        <xs:sequence>
          <xs:element name="SearchSessionId" type="xs:string" minOccurs="1" maxOccurs="1"/>
          <xs:element name="SearchRequestId" type="xs:long" minOccurs="1" maxOccurs="1"/>
          <xs:element name="ResultType" type="t:InstantSearchResultType" minOccurs="1"
  maxOccurs="1"/>
          <xs:element name="Items" type="t:ArrayOfItemsType" minOccurs="0" maxOccurs="1"/>
          <xs:element name="Conversations" type="t:ArrayOfConversationsType" minOccurs="0"
  maxOccurs="1"/>
          <xs:element name="CalendarItems" type="t:ArrayOfCalendarItemsType" minOccurs="0"
  maxOccurs="1"/>
        </xs:sequence>
      </xs:complexType>
```

```
<xs:simpleType name="InstantSearchResultType">
  <xs:list>
    <xs:simpleType>
      <xs:restriction base="xs:string">
        <xs:enumeration value="None"/>
        <xs:enumeration value="Suggestions"/>
        <xs:enumeration value="ItemResults"/>
        <xs:enumeration value="ConversationResults"/>
        <xs:enumeration value="Refiners"/>
        <xs:enumeration value="SearchTerms"/>
        <xs:enumeration value="Errors"/>
        <xs:enumeration value="QueryStatistics"/>
        <xs:enumeration value="CalendarItemResults"/>
        <xs:enumeration value="PersonaResults"/>
        <xs:enumeration value="SuggestionsPrimer"/>
      </xs:restriction>
    </xs:simpleType>
  </xs:list>
</xs:simpleType>
<xs:complexType name="IsEqualToType">
  <xs:complexContent>
    <xs:extension base="t:TwoOperandExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IsEqualTo" type="t:IsEqualToType"
substitutionGroup="t:SearchExpression"/>
<xs:complexType name="IsNotEqualToType">
  <xs:complexContent>
    <xs:extension base="t:TwoOperandExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IsNotEqualTo" type="t:IsNotEqualToType"
substitutionGroup="t:SearchExpression"/>
<xs:complexType name="IsGreaterThanType">
  <xs:complexContent>
    <xs:extension base="t:TwoOperandExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IsGreaterThan" type="t:IsGreaterThanType"
substitutionGroup="t:SearchExpression"/>
<xs:complexType name="IsGreaterThanOrEqualToType">
  <xs:complexContent>
    <xs:extension base="t:TwoOperandExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IsGreaterThanOrEqualTo" type="t:IsGreaterThanOrEqualToType"
substitutionGroup="t:SearchExpression"/>
<xs:complexType name="IsLessThanType">
  <xs:complexContent>
    <xs:extension base="t:TwoOperandExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IsLessThan" type="t:IsLessThanType"
substitutionGroup="t:SearchExpression"/>
<xs:complexType name="IsLessThanOrEqualToType">
  <xs:complexContent>
    <xs:extension base="t:TwoOperandExpressionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IsLessThanOrEqualTo" type="t:IsLessThanOrEqualToType"
substitutionGroup="t:SearchExpression"/>
<xs:simpleType name="ItemQueryTraversalType">
  <xs:restriction base="xs:string">
    <xs:enumeration value="Shallow"/>
    <xs:enumeration value="SoftDeleted"/>
    <xs:enumeration value="Associated"/>
  </xs:restriction>
</xs:simpleType>
<xs:complexType name="NotType">
```

```
        <xs:complexContent>
          <xs:extension base="t:SearchExpressionType">
            <xs:sequence>
              <xs:element ref="t:SearchExpression"/>
            </xs:sequence>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
      <xs:element name="Not" type="t:NotType" substitutionGroup="t:SearchExpression"/>
      <xs:complexType name="MultipleOperandBooleanExpressionType" abstract="true">
        <xs:complexContent>
          <xs:extension base="t:SearchExpressionType">
            <xs:sequence>
              <xs:element ref="t:SearchExpression" minOccurs="1" maxOccurs="unbounded"/>
            </xs:sequence>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="OrType">
        <xs:complexContent>
          <xs:extension base="t:MultipleOperandBooleanExpressionType"/>
        </xs:complexContent>
      </xs:complexType>
      <xs:element name="Or" type="t:OrType" substitutionGroup="t:SearchExpression"/>
      <xs:complexType name="NonEmptyArrayOfFieldOrdersType">
        <xs:sequence>
          <xs:element name="FieldOrder" type="t:FieldOrderType" maxOccurs="unbounded"/>
        </xs:sequence>
      </xs:complexType>
      <xs:simpleType name="QueryOptionsType">
        <xs:list>
          <xs:simpleType>
            <xs:restriction base="xs:string">
              <xs:enumeration value="None"/>
              <xs:enumeration value="Suggestions"/>
              <xs:enumeration value="Results"/>
              <xs:enumeration value="Refiners"/>
              <xs:enumeration value="SearchTerms"/>
              <xs:enumeration value="ExplicitSearch"/>
              <xs:enumeration value="SuggestionsPrimer"/>
              <xs:enumeration value="AllowFuzzing"/>
            </xs:restriction>
          </xs:simpleType>
        </xs:list>
      </xs:simpleType>
      <xs:complexType name="RestrictionType">
        <xs:sequence>
          <xs:element ref="t:SearchExpression"/>
        </xs:sequence>
      </xs:complexType>
      <xs:complexType name="SearchExpressionType" abstract="true"/>
      <xs:element name="SearchExpression" type="t:SearchExpressionType"/>
      <xs:simpleType name="SearchFolderTraversalType">
        <xs:restriction base="xs:string">
          <xs:enumeration value="Shallow"/>
          <xs:enumeration value="Deep"/>
        </xs:restriction>
      </xs:simpleType>
      <xs:complexType name="SearchFolderType">
        <xs:complexContent>
          <xs:extension base="t:FolderType">
            <xs:sequence>
              <xs:element name="SearchParameters" type="t:SearchParametersType" minOccurs="0"/>
            </xs:sequence>
          </xs:extension>
        </xs:complexContent>
      </xs:complexType>
      <xs:complexType name="SearchParametersType">
        <xs:sequence>
```

```
        <xs:element name="Restriction" type="t:RestrictionType"/>
        <xs:element name="BaseFolderIds" type="t:NonEmptyArrayOfBaseFolderIdsType"/>
      </xs:sequence>
      <xs:attribute name="Traversal" type="t:SearchFolderTraversalType" use="optional"/>
    </xs:complexType>
    <xs:complexType name="SeekToConditionPageViewType">
      <xs:complexContent>
        <xs:extension base="t:BasePagingType">
          <xs:sequence>
            <xs:element name="Condition" type="t:RestrictionType" minOccurs="1"/>
          </xs:sequence>
          <xs:attribute name="BasePoint" type="t:IndexBasePointType" use="required"/>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="SortDirectionType">
      <xs:restriction base="xs:string">
        <xs:enumeration value="Ascending"/>
        <xs:enumeration value="Descending"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="StandardGroupByType">
      <xs:restriction base="xs:string">
        <xs:enumeration value="ConversationTopic"/>
      </xs:restriction>
    </xs:simpleType>
    <xs:complexType name="TwoOperandExpressionType" abstract="true">
      <xs:complexContent>
        <xs:extension base="t:SearchExpressionType">
          <xs:sequence>
            <xs:element ref="t:Path"/>
            <xs:element name="FieldURIOrConstant" type="t:FieldURIOrConstantType"/>
          </xs:sequence>
        </xs:extension>
      </xs:complexContent>
    </xs:complexType>
  </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 2007

- Microsoft Exchange Server 2010

- Microsoft Exchange Server 2013

- Microsoft Exchange Server 2016

- Microsoft Lync 2010

- Microsoft Lync Client 2013/Skype for Business

- Microsoft Skype for Business 2016

- Microsoft Skype for Business 2019

- Microsoft Exchange Server 2019

- Microsoft Skype for Business 2021

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

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

<1> Section 2.2.3.13: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **PerformInstantSearch** element.

<2> Section 2.2.3.14: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **PerformInstantSearchResponse** element.

<3> Section 2.2.4: Exchange 2007 and Exchange 2010 do not implement the **SeekToConditionPageViewType** complex type.

<4> Section 2.2.4: Exchange 2007 and Exchange 2010 do not implement the **QueryStringType** complex type.

<5> Section 2.2.4.2: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **ArrayOfCalendarItemsType** complex type.

<6> Section 2.2.4.4: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **ArrayOfItemsType** complex type.

<7> Section 2.2.4.17: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **InstantSearchPayloadType** complex type.

<8> Section 2.2.4.27: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **PerformInstantSearchRequest** complex type.

<9> Section 2.2.4.28: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **PerformInstantSearchResponse** complex type.

<10> Section 2.2.4.34: Exchange 2007 and Exchange 2010 do not implement the **SeekToConditionPageViewType**.

<11> Section 2.2.5.5: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **InstantSearchItemType** simple type.

<12> Section 2.2.5.6: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **InstantSearchResultType** simple type.

<13> Section 2.2.5.8: Exchange 2007, Exchange 2010, and Exchange 2013 do not support the **QueryOptionsType** simple type.

<14> Section 3.1.4.1.1.1: Exchange 2007 and Exchange 2010 do not use the **ManagementRole** part.

<15> Section 3.1.4.2: Exchange 2007, Exchange 2010, and Microsoft Exchange Server 2010 Service Pack 1 (SP1) do not include the **DateTimePrecision** part.

<16> Section 3.1.4.2.1.1: Exchange 2007, the initial release version of Exchange 2010, and Exchange 2010 SP1 do not use the **DateTimePrecision** part.

<17> Section 3.1.4.2.1.1: Exchange 2007 and Exchange 2010 do not use the **ManagementRole** part.

<18> Section 3.1.4.2.3.2: The **Query String** element is not supported in Exchange 2007.

<19> Section 3.1.4.2.3.2: Exchange 2007 and the initial release version of Exchange 2010 return all properties defined for any item in the specified folder.

9 Change Tracking

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

10 Index