[MS-OXOSRCH]:
Search Folder List Configuration Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
04/04/2008	0.1		Initial Availability.
04/25/2008	0.2		Revised and updated property names and other technical content.
06/27/2008	1.0		Initial Release.
08/06/2008	1.01		Revised and edited technical content.
09/03/2008	1.02		Updated references.
12/03/2008	1.03		Updated IP notice.
02/04/2009	1.04		Revised and edited technical content.
03/04/2009	1.05		Revised and edited technical content.
04/10/2009	2.0		Updated applicable product releases.
07/15/2009	3.0	Major	Revised and edited for technical content.
11/04/2009	3.0.1	Editorial	Revised and edited the technical content.
02/10/2010	3.0.1	None	Version 3.0.1 release
05/05/2010	3.1.0	Minor	Updated the technical content.
08/04/2010	3.2	Minor	Clarified the meaning of the technical content.
11/03/2010	3.3	Minor	Clarified the meaning of the technical content.
03/18/2011	4.0	Major	Significantly changed the technical content.
08/05/2011	4.0	No change	No changes to the meaning, language, or formatting of the technical content.

Table of Contents

1 Introduction

The Search Folder List Configuration Protocol enables a client to create, delete, and modify a folder that is used to query for items that match specified criteria. This folder is called a search folder.

Sections 1.8, 2, and 3 of this specification are normative and contain RFC 2119 language. Sections 1.5 and 1.9 are also normative but cannot contain RFC 2119 language. All other sections and examples in this specification are informative.

1.1 Glossary

The following terms are defined in [MS-GLOS]:

big-endian
Coordinated Universal Time (UTC)
GUID

The following terms are defined in [MS-OXGLOS]:

binary large object (BLOB)
Common Views folder
Deleted Items folder
distribution list
Drafts folder
FAI contents table
folder associated information (FAI)
Folder object
inactive search folder
journal
Junk E-mail folder
mailbox
Message object
Outbox folder
remote operation (ROP)
search criteria
search folder
search folder container
search folder definition message
Sent Items folder
skip block
store

The following terms are specific to this document:

active search folder: A search folder (2) that has a search folder container and is up-to-date with the correct search criteria.

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

1.2 References

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. Please check the archive site, http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624, as an additional source.

[MS-NSPI] Microsoft Corporation, "Name Service Provider Interface (NSPI) Protocol Specification".

[MS-OXCDATA] Microsoft Corporation, "Data Structures".

[MS-OXCFOLD] Microsoft Corporation, "Folder Object Protocol Specification".

[MS-OXCMSG] Microsoft Corporation, "Message and Attachment Object Protocol Specification".

[MS-OXCPERM] Microsoft Corporation, "Exchange Access and Operation Permissions Protocol Specification".

[MS-OXCPRPT] Microsoft Corporation, "Property and Stream Object Protocol Specification".

[MS-OXCROPS] Microsoft Corporation, "Remote Operations (ROP) List and Encoding Protocol Specification".

[MS-OXOABK] Microsoft Corporation, "Address Book Object Protocol Specification".

[MS-OXOCAL] Microsoft Corporation, "Appointment and Meeting Object Protocol Specification".

[MS-OXOCFG] Microsoft Corporation, "Configuration Information Protocol Specification".

[MS-OXOCNTC] Microsoft Corporation, "Contact Object Protocol Specification".

[MS-OXOJRNL] Microsoft Corporation, "Journal Object Protocol Specification".

[MS-OXOMSG] Microsoft Corporation, "E-Mail Object Protocol Specification".

[MS-OXONOTE] Microsoft Corporation, "Note Object Protocol Specification".

[MS-OXOSFLD] Microsoft Corporation, "Special Folders Protocol Specification".

[MS-OXOTASK] Microsoft Corporation, "Task-Related Objects Protocol Specification".

[MS-OXPROPS] Microsoft Corporation, "Exchange Server Protocols Master Property List".

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

1.2.2 Informative References

[MSDN-FAIT] Microsoft Corporation, "Folder-Associated Information Tables", http://msdn.microsoft.com/en-us/library/ms531548.aspx

[MS-GLOS] Microsoft Corporation, "Windows Protocols Master Glossary".

[MS-OXCSTOR] Microsoft Corporation, "Store Object Protocol Specification".

[MS-OXGLOS] Microsoft Corporation, "Exchange Server Protocols Master Glossary".

1.3 Overview

A **search folder (2)** provides a means of querying for items that match certain criteria. To the user, a search folder (2) appears in the client as a normal folder that populates itself when opened. A search folder (2) uses one of the standard templates or a custom search created by the user to include specific **search criteria**.

This protocol enables a client to create, delete, and modify search folders (2). To create a search folder (2), the client collects the data that is used to define the search criteria, creates a **search folder container** to contain the results of the search, and creates a **search folder definition message** to persist the information that defines the search folder (2). Search criteria are persisted on the server, although it is not necessary for the server to understand the criteria. Search criteria are saved as a **folder associated information (FAI)** message in a hidden folder outside the root **mailbox** and is not directly visible to the end user.

1.4 Relationship to Other Protocols

The Search Folder List Configuration Protocol relies on other protocols as follows:

- It relies on the Message and Attachment Object Protocol, which is described in [MS-OXCMSG], to create and delete messages containing search folder (2) configuration data.

- It relies on the Folder Object Protocol, which is described in [MS-OXCFOLD], to create search folder containers based on the configuration data.

- It relies on the Property and Stream Object Protocol, which is specified in [MS-OXCPRPT], to read and write properties of messages containing search folder (2) configuration data.

1.5 Prerequisites/Preconditions

This protocol assumes that the client has logged on to the **store**, as described in [MS-OXCSTOR], with the ability to read and write **Message objects**, **Folder objects**, and their properties.

1.6 Applicability Statement

This protocol is applicable for creating user-defined queries that are used for searching a mailbox. The queries can be saved for reuse. The saved queries can be modified or deleted.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

This protocol uses the same transport as that specified in [MS-OXCMSG], [MS-OXCFOLD], and [MS-OXCPRPT].

2.2 Message Syntax

2.2.1 Search Folder Definition Message

A search folder definition message is stored as an FAI message, as specified in [MS-OXCMSG], in the **FAI contents table**, as described in [MSDN-FAIT], of the **Common Views folder**, as specified in [MS-OXOSFLD], within a store. The search folder definition message is how a search folder (2) is persisted; a search folder (2) ceases to exist if its search folder definition message is deleted.<1> For more details about how a search folder definition message relates to a search folder (2) and a search folder container, see section 2.2.4.

A search folder definition message has properties that describe the search criteria. These properties are specified in the following subsections.

2.2.1.1 Common Properties

The following subsections provide details about properties that are common to most Message objects, including a search folder definition message. For general details about properties, see [MS-OXPROPS]. The property data types are defined in [MS-OXCDATA] section 2.11.1.

2.2.1.1.1 PidTagMessageClass

Type: **PtypString**

The **PidTagMessageClass** property ([MS-OXCMSG] section 2.2.1.3) specifies the type of the Message object. The value of this property MUST be "IPM.Microsoft.WunderBar.SFInfo" to indicate that the Message object is a search folder definition message.

2.2.1.1.2 PidTagDisplayName

Type: **PtypString**

The **PidTagDisplayName** property ([MS-OXCFOLD] section 2.2.2.2.2.3) specifies the name of the search folder (2). The client SHOULD use this property value as the display name of the search folder container.

2.2.1.2 Additional Properties

The following subsections provide details about properties that are specific to a search folder definition message. For general details about properties, see [MS-OXPROPS]. The property data types are defined in [MS-OXCDATA] section 2.11.1.

2.2.1.2.1 PidTagSearchFolderId

Type: **PtypBinary**

The **PidTagSearchFolderId** property ([MS-OXPROPS] section 2.1052) contains a **GUID** that identifies the search folder (2). The value of this property MUST NOT change.

The GUID of the search folder definition message MUST match the GUID of the corresponding search folder container. For details about the relationship between the search folder definition message and the search folder container, see section 2.2.4.

2.2.1.2.2   PidTagSearchFolderTemplateId

Type: **PtypInteger32**

The **PidTagSearchFolderTemplateId** property ([MS-OXPROPS] section 2.1057) specifies the ID of the template that is being used for the search. For more details about search templates, see section 2.2.3.

2.2.1.2.3   PidTagSearchFolderTag

Type: **PtypInteger32**

The **PidTagSearchFolderTag** property ([MS-OXPROPS] section 2.1056) contains a 4-byte value that marks the current search folder (2). The value of this property does not have to be unique, but it MUST change with every update of the search folder definition message; otherwise, another client accessing the store will not be able to determine whether the search folder (2) has changed.

The tag of the search folder definition message MUST match the tag of the corresponding search folder container. For details about the relationship between the search folder definition message and the search folder container, see section 2.2.4.

2.2.1.2.4   PidTagSearchFolderLastUsed

Type: **PtypInteger32**

The **PidTagSearchFolderLastUsed** property ([MS-OXPROPS] section 2.1053) specifies the last time the search folder (2) was accessed. It is formatted as the number of minutes since midnight (**Coordinated Universal Time (UTC)**) January 1, 1601. This property is set to the current time when the search folder definition message is created.

2.2.1.2.5   PidTagSearchFolderExpiration

Type: **PtypInteger32**

The **PidTagSearchFolderExpiration** property ([MS-OXPROPS] section 2.1051) specifies the time at which the search folder container will be stale and has to be updated or re-created. It is formatted as the number of minutes since midnight (**UTC**) January 1, 1601.

2.2.1.2.6   PidTagSearchFolderStorageType

Type: **PtypInteger32**

The **PidTagSearchFolderStorageType** property ([MS-OXPROPS] section 2.1055) contains flags that control the presence and content of certain fields within the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8). These flags are duplicated within the **PidTagSearchFolderDefinition** property. The specific flags to use depends on the template; section 2.2.3 specifies the correct flags for each template definition.

The flags are stored as a 4-byte integer. The following table shows the flags in **big-endian** order. (The flags are in network order within the **PidTagSearchFolderDefinition** property.)

Flag name	Big-endian bit
B	0x00000040
C	0x00000020
D	0x00000010
E	0x00000008
F	0x00000004
G	0x00000002
H	0x00000001
J	0x00004000
K	0x00002000
L	0x00001000

2.2.1.2.7 PidTagSearchFolderEfpFlags

Type: **PtypInteger32**

The **PidTagSearchFolderEfpFlags** property ([MS-OXPROPS] section 2.1050) contains flags that control how a folder is displayed. The flag settings SHOULD match the flag settings of the **b** field of the **ExtendedFlags** subproperty of the search folder container, as specified in section 2.2.2.1.2.<2>

2.2.1.2.8 PidTagSearchFolderDefinition

Type: **PtypBinary**

The **PidTagSearchFolderDefinition** property ([MS-OXPROPS] section 2.1049) contains data that specifies the search criteria and search options. The structure of this property is specified as follows. The presence and specific content of some fields are dependent upon the template that is used for the search. The template ID, specified in the **PidTagSearchFolderTemplateId** property (section 2.2.1.2.2), identifies the template to be used. For details about the templates and how they affect the fields of the **PidTagSearchFolderDefinition** property, see section 2.2.3.

0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
Version																															
A	B	C	D	E	F	G	H	I	J	K	L	Reserved																			
NumericalSearch																															

TextSearchLength	TextSearchExtendedLength (optional)		TextSearch (variable)
...			
SkipBlock1 (variable)			
...			
DeepSearch			
FolderList1Length	FolderList1ExtendedLength (optional)		FolderList1 (variable)
...			
FolderList2Length			
FolderList2 (variable)			
...			
Addresses (variable)			
...			
SkipBlock2 (variable)			
...			
SearchRestriction (variable)			
...			
AdvancedSearch (variable)			
...			
SkipBlock3 (variable)			
...			

Version (4 bytes): A 4-byte value that specifies the version of the data. The value SHOULD be 0x04100000 (network order).

A (1 bit): Unused. This bit MUST be zero (0) when sent and MUST be ignored on receipt.

B (1 bit): A value that indicates whether the **FolderList2** field is present. If this field is set to 1, the **FolderList2** field MUST be present.

C (1 bit): A value that indicates whether the **FolderList1** field is present. If this field is set to 1, the **FolderList1** field MUST be present.

D (1 bit): A value that indicates whether the **AdvancedSearch** field is present. If this field is set to 1, the **AdvancedSearch** field MUST be present.

E (1 bit): A value that indicates whether the **SearchRestriction** field is present. If this field is set to 1, the **SearchRestriction** field MUST be present.

F (1 bit): A value that indicates whether the **Addresses** field is present. If this field is set to 1, the **Addresses** field MUST be present.

G (1 bit): A value that indicates whether the **TextSearch** field is present. If this field is set to 1, the **TextSearch** field MUST be present.

H (1 bit): A value that indicates whether the **NumericalSearch** field is used. If this field is set to 1, the **NumericalSearch** field MUST contain a valid value.

I (1 bit): Unused. This bit MUST be zero (0) when sent and MUST be ignored on receipt.

J (1 bit): A value that indicates whether the search folder container is refreshed daily. If this field is set to 1, the search folder container is refreshed daily. In this case, the **PidTagSearchFolderExpiration** property (section 2.2.1.2.5) is set to a value that is one day in the future.

K (1 bit): A value that indicates whether the search folder container is refreshed weekly. If this field is set to 1, the search folder container is refreshed weekly. In this case, the **PidTagSearchFolderExpiration** property is set to a value that is one week in the future.

L (1 bit): A value that indicates whether the search folder container is refreshed monthly. If this field is set to 1, the search folder container is refreshed monthly. In this case, the **PidTagSearchFolderExpiration** property (section 2.2.1.2.5) is set to a value that is one month in the future.

Reserved (20 bits): Unused. This field MUST be set to 0x00000 when sent and MUST be ignored on receipt.

NumericalSearch (4 bytes): An integer that specifies either the size or the age of the messages to be searched. If the **H** field is set to zero (0), this field MUST be set to 0x00000000 when sent and MUST be ignored on receipt.

The value of this field has the following format (in big-endian order) for specifying age:

- The upper two bytes specify the units as follows:

    - 0x0000: Days

    - 0x0001: Weeks

    - 0x0002: Months

- The lower two bytes specify the amount.

For example, the value 0x0001002A specifies an age of 42 weeks.
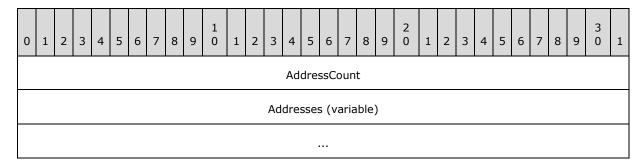
TextSearchLength (1 byte): An integer that specifies the size, in characters, of the **TextSearch** field. If the **TextSearch** field is longer than 254 characters, this field MUST be set to 255. If the **G** field is set to zero (0), this field MUST be set to zero (0).

TextSearchExtendedLength (2 bytes): An integer that specifies the size of the **TextSearch** field when its size is greater than 254 characters. This field MUST NOT be present if the value of the **TextSearchLength** field is less than 255.

TextSearch (variable): A string that specifies search criteria. The particular criteria specified depend on the template used. The size of the string, in characters, is specified by the **TextSearchLength** field. The string MUST NOT be longer than 65,536 characters. If the **G** field is set to zero (0), this field MUST NOT be present.

SkipBlock1 (variable): A **skip block** that specifies the number of bytes to skip ahead. This is for future versions to insert new data. If there is no data to skip, the value of this field MUST be zero (0), and its size is 4 bytes. If there is data to skip, the size of this field MUST be 4 bytes plus the size of the data to be skipped.

DeepSearch (4 bytes): A Boolean value that specifies whether the search includes subfolders. If the search includes subfolders, this field is set to TRUE (0x00000001); otherwise, this field is set to FALSE (0x00000000).

FolderList1Length (1 byte): An integer that specifies the size, in characters, of the **TextSearch** field. If the **FolderList1** field is longer than 254 characters, this field MUST be set to 255. If the **C** field is set to zero (0), this field MUST be set to zero (0).

FolderList1ExtendedLength (2 bytes): An integer that specifies the size of the **FolderList1** field when its size is greater than 254 characters. This field MUST NOT be present if the value of the **FolderList1Length** field is less than 255.

FolderList1 (variable): A string that contains the names of the folders to be searched. The size of the string, in characters, is specified by the **FolderList1Length** field. The string MUST NOT be longer than 65,536 characters. If the **C** field is set to zero (0), this field MUST NOT be present.

FolderList2Length (4 bytes): An integer that specifies the size, in bytes, of the **FolderList2** field. If the **B** field is set to zero (0), this field MUST be set to zero (0).

FolderList2 (variable): An **EntryList** structure, as specified in [MS-OXCDATA] section 2.3.1, that contains a list of the folders to be searched. If the **B** field is set to zero (0), this field MUST NOT be present.

Addresses (variable): An **AddressList** structure, as specified in section 2.2.1.2.8.1, that contains a list of addresses to be included in the search. If the **F** field is set to zero (0), this field MUST NOT be present.

SkipBlock2 (variable): A skip block that specifies the number of bytes to skip ahead. This is for future versions to insert new data. If there is no data to skip, the value of this field MUST be zero (0), and its size is 4 bytes. If there is data to skip, the size of this field MUST be 4 bytes plus the size of the data to be skipped.

SearchRestriction (variable): A **Restriction** structure, as specified in section 2.2.1.2.8.2, that explicitly defines the search criteria. If the **E** field is set to zero (0), this field MUST NOT be present.

AdvancedSearch (variable): A low-order 4-byte integer followed by a high-order 4-byte integer, forming a 64-bit value that specifies the number of data bytes contained in this field. The total length of this field is 8 plus the length of the data. The data is implementation-specific. If the **D** field is set to zero (0), this field MUST NOT be present.

SkipBlock3 (variable): A skip block that specifies the number of bytes to skip ahead. This is for future versions to insert new data. If there is no data to skip, the value of this field MUST be zero (0), and its size will be 4 bytes. If there is data to skip, the size of this field MUST be 4 bytes plus the size of the data to be skipped.

2.2.1.2.8.1 AddressList

The **AddressList** structure contains a list of addresses.

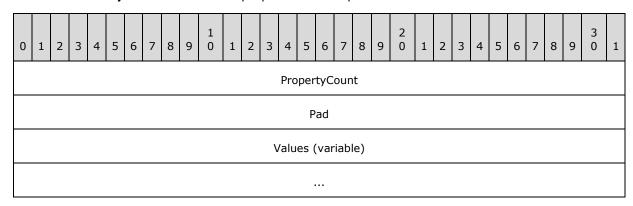| 0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
AddressCount																															
Addresses (variable)																															
...																															

AddressCount (4 bytes): An unsigned integer that indicates the number of **AddressEntry** structures in the **Addresses** field.

Addresses (variable): An array of **AddressEntry** structures, as specified in section 2.2.1.2.8.1.1.

2.2.1.2.8.1.1 AddressEntry

The **AddressEntry** structure contains properties that represent an addressee.

0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
PropertyCount																															
Pad																															
Values (variable)																															
...																															

PropertyCount (4 bytes): An unsigned integer that indicates the number of **PropertyValue** structures in the **Values** field.

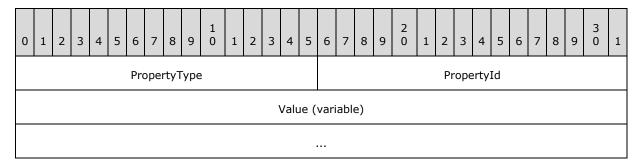**Pad (4 bytes):** Ignored. This field can be any value.

Values (variable): This field contains an array of **PropertyValue** structures (section 2.2.1.2.8.1.1.1). This field MUST include the properties in the following list. Other properties can be included.

- **PidTagDisplayName** ([MS-OXCFOLD] section 2.2.2.2.2.3)

- **PidTagAddressType** ([MS-OXOABK] section 2.2.3.13)

- **PidTagEntryId** ([MS-OXCPERM] section 2.2.1.4)

- **PidTagObjectType** ([MS-OXCPRPT] section 2.2.1.7)

- **PidTagDisplayType** ([MS-OXOABK] section 2.2.3.11)

- **PidTagDisplayTypeEx** ([MS-OXOABK] section 2.2.3.12)

- **PidTagEmailAddress** ([MS-OXOABK] section 2.2.3.14)

- **PidTagRecipientType** ([MS-OXOMSG] section 2.2.3.1)

2.2.1.2.8.1.1.1 PropertyValue

The **PropertyValue** structure represents a single property of an addressee.

0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
PropertyType																PropertyId															
Value (variable)																															
...																															

PropertyType (2 bytes): An integer that specifies the type of data in the **Value** field. The data can be any of the following types. For details about these types, see [MS-OXCDATA] section 2.11.1.

- **PtypInteger32**

- **PtypErrorCode**

- **PtypBoolean**

- **PtypString**

- **PtypString8**

- **PtypTime**

- **PtypBinary**

- **PtypMultipleString8**

- **PtypMultipleBinary**

PropertyId (2 bytes): An integer that identifies the data in the **Value** field.

Value (variable): The data that is the value of the property. The format of the data depends on the type that is specified in the **PropertyType** field.

2.2.1.2.8.2 Restriction

The **Restriction** structure represents a filter that defines the search criteria in a search folder (2).

0	1	2	3	4	5	6	7	8	9	1 0	1	2	3	4	5	6	7	8	9	2 0	1	2	3	4	5	6	7	8	9	3 0	1
RestrictionType																															
RestrictionData (variable)																															
...																															

RestrictionType (4 bytes): An integer that specifies the type of structure in the **RestrictionData** field. It can have one of the following values.

RestrictionType name	RestrictionType value	RestrictionData specification
AndRestriction	0x00000000	Variable size, a 32-bit count of subrestrictions, followed by the subrestrictions in **Restriction** format. An object satisfies this filter if and only if all subrestrictions are satisfied.
OrRestriction	0x00000001	Variable size, a 32-bit count of subrestrictions, followed by the subrestrictions in **Restriction** format. An object satisfies this filter if at least one subrestriction is satisfied.
NotRestriction	0x00000002	Variable size, a subrestriction in **Restriction** format. An object satisfies this filter if and only if the subrestriction is not satisfied.
ContentRestriction	0x00000003	Variable size, a 32-bit **ulFuzzyLevel** field, a specified in [MS-NSPI], followed by a 32-bit **PropertyTag** structure ([MS-OXCDATA] section 2.9), followed by the comparand in **PropertyValue** format (section 2.2.1.2.8.1.1.1). An object satisfies this filter if and only if the given property is equivalent to the given comparand at the specified value of the **ulFuzzyLevel** field.
PropertyRestriction	0x00000004	Variable size, a 32-bit **RelOp** field, with the three high-order bytes set to zeros, followed by a 32-bit **PropertyTag** structure, followed by the comparand in **PropertyValue** format. An object satisfies this filter if and only if the **RelOp** value describes the given property's relationship to the comparand, as specified in [MS-OXCDATA] section 2.12.5.1.
ComparePropertiesRestriction	0x00000005	12 bytes, a 32-bit **RelOp** field, with the three high-order bytes set to zeros, followed by two 32-bit **PropertyTag**

RestrictionType name	RestrictionType value	RestrictionData specification
		structures. An object satisfies this filter if and only if the **RelOp** value describes the first property's relationship to the second property, as specified in [MS-OXCDATA] section 2.12.6.1.
BitMaskRestriction	0x00000006	12 bytes, a 32-bit **BitmapRelOp** field, with the three high-order bytes set to zeros, followed by a 32-bit **PropertyTag** structure, followed by the comparand as a 32-bit mask. An object satisfies this filter if and only if the bitwise AND of the property with the comparand satisfies the **BitmapRelOp** value, as specified in [MS-OXCDATA] section 2.12.7.1.
ExistRestriction	0x00000008	4 bytes, a 32-bit **PropertyTag** structure. An object satisfies this filter if and only if the given property is set on the object.
CommentRestriction	0x0000000A	Variable size, a 32-bit count of annotations, followed by a subrestriction in **Restriction** format, followed by the annotations in **PropertyValue** format. An object satisfies this filter if and only if the object satisfies the subrestriction. The annotations SHOULD be left intact and ignored.
CountRestriction	0x0000000B	Variable size, a subrestriction in **Restriction** format. An object satisfies this filter if and only if the object satisfies the subrestriction.

RestrictionData (variable): The contents of this field depend on the value of the **RestrictionType** field. It contains data that is formatted as specified in the table in the description of **RestrictionType** field in this section.

2.2.1.2.9   PidTagSearchFolderRecreateInfo

Type: **PtypBinary**

This property SHOULD NOT be used.

2.2.2   Search Folder Container

Although the search folder definition message persists, a search folder container only exists if the search folder (2) is an **active search folder**. If a search folder (2) is inactive, the search folder container will not exist. For more details about active and **inactive search folders**, and the relationship between search folder definition messages and search folder containers, see section 2.2.4.

A search folder container is created and modified as described in sections 3.1.4.1 and 3.1.4.3. A search folder container uses search criteria, a feature that is not unique to this protocol. These folders also require the use of several common properties.

2.2.2.1 Common Properties

The following subsections provide details about properties that are common to most Folder objects, including a search folder container. For general details about properties, see [MS-OXPROPS]. The property data types are defined in [MS-OXCDATA] section 2.11.1.

2.2.2.1.1 PidTagContainerClass

Type: **PtypString**

The **PidTagContainerClass** property ([MS-OXOCAL] section 2.2.11.1) MUST be set to "IPF.Note" for the Folder object to be recognized as a search folder container.

2.2.2.1.2 PidTagExtendedFolderFlags

Type: **PtypBinary**

The **PidTagExtendedFolderFlags** property ([MS-OXPROPS] section 2.752) is a **binary large object (BLOB)** that contains subproperties of a Folder object. These subproperties control folder configuration that is shared between client and server. Each subproperty is formatted as specified in [MS-OXOCFG] section 2.2.7.1.

The **PidTagExtendedFolderFlags** property of a search folder container MUST include at least the **SearchFolderTag**, **SearchFolderID**, and **ExtendedFlags** subproperties with the settings as specified in the following table.

Subproperty name	Id field	Cb field	Data field
SearchFolderTag	0x03	0x04	A 4-byte value that matches the value of the **PidTagSearchFolderTag** property (section 2.2.1.2.3) of the search folder definition message.
SearchFolderID	0x02	0x10	A GUID that matches the GUID stored in the **PidTagSearchFolderId** property (section 2.2.1.2.1) of the search folder definition message.
ExtendedFlags	0x01	0x04	A 4-byte value, as specified in [MS-OXOCFG] section 2.2.7.1.2. The settings of the **b** field SHOULD<3> match the settings of the **PidTagSearchFolderEfpFlags** property (section 2.2.1.2.7) of the search folder definition message.

2.2.3 Search Templates

Search criteria are specified by a template. The **PidTagSearchFolderTemplateId** property (section 2.2.1.2.2) on the message that defines the search folder (2) identifies its corresponding template. In addition to defining search criteria, a template also defines folders to exclude from the search, defines items to exclude from the search, and specifies the value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6). For more details about the folders that are excluded from the search, see [MS-OXOSFLD]. For more details about the item types that are excluded from the search, see the following:

- Appointments - [MS-OXOCAL]

- Contacts - [MS-OXOCNTC]

- Distribution lists - [MS-OXOABK]

- Journal items - [MS-OXOJRNL]

- Sticky notes - [MS-OXONOTE]

- Tasks - [MS-OXOTASK]

The flags set in the **PidTagSearchFolderStorageType** property and in the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) vary according to template. The fields required in the binary data of **PidTagSearchFolderDefinition** also vary according to template. The following subsections define the templates, including their requirements for **PidTagSearchFolderStorageType** flags and **PidTagSearchFolderDefinition** fields.<4><5>

2.2.3.1 Unread Messages

The template for a search that finds unread messages has the following characteristics and settings:

- Template ID: 2

- Folders excluded: Failed Sync Items folder, **Deleted Items folder**, **Junk E-mail folder**, **Outbox folder**, **Drafts folder**

- Items excluded: Appointments, contacts, **distribution lists**, **journal** items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This search will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes unread messages.

2.2.3.2 Marked for Follow-Up

The template for a search that finds messages marked for follow-up has the following characteristics and settings:

- Template ID: 3

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder<6>

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

- **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages marked for follow-up.

2.2.3.3   Unread or Marked for Follow-Up

The template for a search that finds both unread messages and messages marked for follow-up has the following characteristics and settings:

- Template ID: 4

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes unread messages and messages marked for follow-up.

2.2.3.4   Important Mail

The template for a search that finds messages marked as important has the following characteristics and settings:

- Template ID: 5

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder, Drafts folder<7>

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure, as specified in section 2.2.1.2.8.2, that describes messages marked as important.

2.2.3.5   Conversations

The template for a search that finds messages sent to and received from specified people has the following characteristics and settings:

- Template ID: 6

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder, Drafts folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x0000004E (flags **B**, **E**, **F**, and **G**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages sent to and received from people who are specified by the **Addresses** field.

  - **Addresses**: An **AddressList** structure (section 2.2.1.2.8.1) that contains the addresses by which to filter conversations.

  - **TextSearch**: A list of the names of the people by which to filter conversations.

2.2.3.6   From a Specific Person

The template for a search that finds messages received from specified people has the following characteristics and settings:

- Template ID: 7

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder, Drafts folder, **Sent Items folder**

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x0000004E (flags **B**, **E**, **F**, and **G**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages received from people who are specified by the **Addresses** field.

  - **Addresses**: An **AddressList** structure (section 2.2.1.2.8.1) that contains the addresses by which to filter received messages.

  - **TextSearch**: A list of the names of the people by which to filter received messages.

2.2.3.7 Sent Directly to Me

The template for a search that finds messages sent to the user has the following characteristics and settings:

- Template ID: 8

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder, Drafts folder, Sent Items folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  ▪**SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages sent to the user.

2.2.3.8 Sent to a Specific Distribution List

The template for a search that finds messages sent to specified distribution lists has the following characteristics and settings:

- Template ID: 9

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x0000004E (flags **B**, **E**, **F**, and **G**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  ▪**SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages sent to the distribution lists specified by the **Addresses** field.

  ▪**Addresses**: An **AddressList** structure (section 2.2.1.2.8.1) that contains the distribution lists by which to filter sent messages.

  ▪**TextSearch**: A list of the names of the distribution lists by which to filter sent messages.

2.2.3.9 Large Messages

The template for a search that finds large messages has the following characteristics and settings:

- Template ID: 10

- Folders excluded: Failed Sync Items folder, Deleted Items folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x0000004B (flags **B**, **E**, **G**, and **H**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages larger than the size specified by the **NumericalSearch** field.

  - **TextSearch**: A string that specifies the size, including units. Example: 99 KB

  - **NumericalSearch**: An integer that specifies the minimum size, in kilobytes, of the messages to search for.

2.2.3.10 Old Mail

The template for a search that finds messages older than a specified age has the following characteristics and settings:

- Template ID: 11

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00004049 (flags **B**, **E**, **H**, and **J**) to indicate daily refresh, 0x00002049 (flags **B**, **E**, **H**, and **K**) to indicate weekly refresh, or 0x00001049 (flags **B**, **E**, **H**, and **L**) to indicate monthly refresh.

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  - **FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  - **SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages older than the age specified by the **NumericalSearch** field.

  - **NumericalSearch**: An integer that specifies the age of the messages to search for.

2.2.3.11 With Attachments

The template for a search that finds messages having attachments has the following characteristics and settings:

- Template ID: 12

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder, Drafts folder <8>

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  ▪**SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages having file attachments.

2.2.3.12   Mail Received This Week

The template for a search that finds messages received during the current week has the following characteristics and settings:

- Template ID: 13

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Drafts folder, Outbox folder, Sent Items folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00002048 (flags **B**, **E**, and **K**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  ▪**SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages received on or after the first day of the current week but no later than seven days after the first day of the week. The first day of the week is determined by computer locale settings but can potentially be overridden by the user.

2.2.3.13   With Specific Words

The template for a search that finds messages containing certain words has the following characteristics and settings:

- Template ID: 14

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Outbox folder, Drafts folder <9>

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x0000004A (flags **B**, **E**, and **G**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  ▪**SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages containing certain words.

  ▪**TextSearch**: A string that specifies the words for which to search.

2.2.3.14 Categorized

The template for a search that finds categorized messages has the following characteristics and settings:

- Template ID: 15

- Folders excluded: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000048 (flags **B** and **E**) to indicate any category or 0x0000004A (flags **B**, **E**, and **G**) to indicate specific categories.

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**FolderList2**: An **EntryList** structure ([MS-OXCDATA] section 2.3.1) that contains the folders to be searched. This will include all mailbox folders, except the ones specifically excluded by this template.

  ▪**SearchRestriction**: A **Restriction** structure (section 2.2.1.2.8.2) that describes messages having a category. If the **G** flag is set in the **PidTagSearchFolderStorageType** property, the **Restriction** structure describes messages that have a category matching the string contained in the **TextSearch** field.

  ▪**TextSearch**: A string that specifies the categories for which to search. This field is present only if the **G** flag is set.

2.2.3.15 Custom

The template for a custom search has the following characteristics and settings:

- Template ID: 1

- Folders excluded: Failed Sync Items folder

- Items excluded: Appointments, contacts, distribution lists, journal items, sticky notes, tasks

- Value of the **PidTagSearchFolderStorageType** property (section 2.2.1.2.6): 0x00000010 (flag **D**)

- The affected fields of the **PidTagSearchFolderDefinition** property (section 2.2.1.2.8) are as follows:

  ▪**AdvancedSearch**: Implementation-specific data based on user-specified options.

2.2.4   Search Folder Definition Messages and Search Folder Containers

A search folder (2) exists only if it has a search folder definition message. Each search folder definition message has a GUID, which is stored in the **PidTagSearchFolderId** property (section 2.2.1.2.1). This GUID is fixed and MUST NOT change. A search folder container also has a GUID, which is stored in the **SearchFolderID** subproperty of the **PidTagExtendedFolderFlags** property (section 2.2.2.1.2). A search folder definition message is associated with a search folder container only if their **GUIDs** match. If both the search folder container and the search folder definition message exist with matching GUIDs, the search folder (2) is active. If the search folder container does not exist, the search folder (2) is inactive. The client can make an inactive search folder active by creating the search folder container as specified in section 3.1.4.1.2.

Any update of a search folder definition message requires the search folder container to be synchronized with its search folder definition message. A search folder container is synchronized with its search folder definition message only if the folder's 4-byte tag, which is stored in the **SearchFolderTag** subproperty (section 2.2.2.1.2), is equal to the value of the **PidTagSearchFolderTag** property (section 2.2.1.2.3). For details about how a client can modify a search folder (2), see section 3.1.4.3.

The relationship between a search folder definition message and its search folder container is summarized in the following table.

Item	Search folder definition message	Search folder container	Explanation
GUID	The **PidTagSearchFolderId** property (section 2.2.1.2.1) contains the GUID.	The **Data** field of the **SearchFolderID** subproperty (section 2.2.2.1.2) contains the GUID.	The GUIDs MUST match to tie the search folder definition message to the search folder container.
Tag	The **PidTagSearchFolderTag** property (section 2.2.1.2.3) contains the tag.	The **Data** field of the **SearchFolderTag** subproperty (section 2.2.2.1.2) contains the tag.	The tags MUST match to synchronize the search folder container with the current search folder definition message.

3   Protocol Details

3.1   Client Details

3.1.1   Abstract Data Model

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

All data necessary for the Search Folder List Configuration Protocol is persisted in the search folder definition message, the properties of which are specified in section 2.2.1. The data is used to create and maintain search folder containers, as specified in section 2.2.2.

3.1.2   Timers

None.

3.1.3   Initialization

For this protocol, there is no specific initialization, because all messages use the existing connection assumed in section 1.5.

To display the list of existing search folders (2) to the user at start-up, the client does the following:

- Return the FAI messages that are in the Common Views folder of the store. Each Message object with the **PidTagMessageClass** property ([MS-OXCMSG] section 2.2.1.3) set to "IPM.Microsoft.Wunderbar.SFInfo" is a search folder definition message.

- Load the Folder objects that are in the Finder folder. Each folder with the **PidTagFolderType** property ([MS-OXCFOLD] section 2.2.2.2.2.4) set to FOLDER_SEARCH (0x00000002) and **PidTagContainerClass** ([MS-OXPROPS] section 2.703) set to "IPF.Note" is a search folder container.

- Examine the **PidTagExtendedFolderFlags** property (section 2.2.2.1.2) of each search folder container. If the GUID of the search folder container matches the value of the **PidTagSearchFolderId** property (section 2.2.1.2.1) of the search folder definition message, that Folder object is associated with that search folder definition message.

- Delete any search folder container that does not have a corresponding search folder definition message.

3.1.4   Higher-Layer Triggered Events

3.1.4.1   Creating a Search Folder

To create a search folder (2), the client completes three steps:

1. Obtain data to define the search criteria.

2. Create the search folder container to contain the search results.

3. Create the search folder definition message to persist the search folder (2).

The details for each of these steps are specified in the following subsections.

3.1.4.1.1 Obtaining Data

The client SHOULD do the following:

- Obtain a name for the search folder (2). The manner in which the client obtains the name is implementation-dependent.

- Identify which template to use for the search folder (2). The manner in which the client identifies the template is implementation-dependent. For details about search templates, see section 2.2.3.

- Obtain specific data needed by the chosen template. The manner in which the client obtains the data for the template is implementation-dependent.

3.1.4.1.2 Creating a New Search Folder Container

The client creates a search folder container in the Finder folder of the store. The new search folder container MUST have the **PidTagContainerClass** (section 2.2.2.1.1) and **PidTagExtendedFolderFlags** (section 2.2.2.1.2) properties.

To create a search folder container, the client creates a folder as specified in [MS-OXCFOLD] section 3.1.4.2, with the **FolderType** field of the **RopCreateFolder remote operation (ROP)** ([MS-OXCROPS] section 2.2.4.2) set to 0x02. The **DisplayName** field of the **RopCreateFolder** ROP is set to the name of the search folder (2). After the search folder container is created, the client sets the search criteria as specified in [MS-OXCFOLD] section 3.1.4.4.

The GUIDs of the search folder container and the search folder definition message MUST match, and the 4-byte tags of the search folder container and the search folder definition message MUST match. For details, see section 2.2.4.

3.1.4.1.3 Creating a New Definition Message

The client creates a new search folder definition message in the FAI contents table of the Common Views folder of the store. The new search folder definition message MUST have the properties that are specified in section 2.2.1.1 and section 2.2.1.2.

The GUIDs of the search folder container and the search folder definition message MUST match, and the 4-byte tags of the search folder container and the search folder definition message MUST match. For details, see section 2.2.4.

3.1.4.2 Opening a Search Folder

If the search folder (2) is not active, the client MUST create the folder in the Finder folder of the store, as specified in section 3.1.4.1.

If the current date/time is later than the value of the **PidTagSearchFolderExpiration** property (section 2.2.1.2.5), the client SHOULD re-create the search criteria and update the search folder definition message and the search folder container.

After the Folder object is updated, or if the search folder (2) was active already, the client can open the search folder (2) as specified in [MS-OXCFOLD] section 3.1.4.1. When the search folder (2) is opened, the client SHOULD set the value of the **PidTagSearchFolderLastUsed** property (section 2.2.1.2.4) to the current time.

3.1.4.3 Modifying a Search Folder

Any changes to the search folder (2) MUST be made to the search folder definition message in the FAI contents table of the Common Views folder. The search folder container (if one exists) MUST be updated or deleted. If it is deleted, it MUST be updated or re-created when the search folder (2) is accessed. In addition to any change:

- The **PidTagSearchFolderTag** property (section 2.2.1.2.3) of the Message object and the **SearchFolderTag** subproperty (section 2.2.2.1.2) of the search folder container MUST be updated. These new values MUST be equal.

- The **PidTagSearchFolderLastUsed** property (section 2.2.1.2.4) is set to the current time.

3.1.4.4 Deleting a Search Folder

To delete a search folder (2), the client MUST delete the Message object from the FAI contents table of the Common Views folder and delete the Folder object from the Finder folder. For details about deleting a Folder object, see [MS-OXCFOLD] section 3.1.4.3.

If the GUID of a search folder container does not match the GUID of any search folder definition message, that search folder container is deleted. For more details about the relationship between the search folder container and the search folder definition message, see section 2.2.4.

3.1.4.5 Current Time Exceeds the Specified Time

When the current time passes the time specified in the **PidTagSearchFolderExpiration** property (section 2.2.1.2.5), the client SHOULD delete (mark inactive) the Folder objects that are in the Finder folder.

3.1.5 Message Processing Events and Sequencing Rules

In the event that messages with potentially conflicting changes arrive close to one another, this protocol follows the standard messaging behavior specified in [MS-OXCMSG] and [MS-OXCFOLD].

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.2 Server Details

None.

3.2.1 Abstract Data Model

None.

3.2.2 Timers

None.

3.2.3   Initialization

None.

3.2.4   Higher-Layer Triggered Events

None.

3.2.5   Message Processing Events and Sequencing Rules

The server responds to requests from the client as specified in [MS-OXCFOLD] section 3.2.5.

3.2.6   Timer Events

None.

3.2.7   Other Local Events

None.

4   Protocol Examples

4.1   Search Folder Message Object

This example shows the search folder definition message for a search folder (2) that contains unread messages. To create this search folder definition message, the client creates a Message object having the property values shown in the following tables. For information about how to create a Message object, see [MS-OXCMSG].

Property name	Value
PidTagMessageClass (section 2.2.1.1.1)	IPM.Microsoft.WunderBar.SFInfo
PidTagDisplayName (section 2.2.1.1.2)	Unread Mail
PidTagSearchFolderLastUsed (section 2.2.1.2.4)	214089600 (08:00:00.000 January 21, 2008)
PidTagSearchFolderExpiration (section 2.2.1.2.5)	214089641 (08:41:00.000 January 21, 2008)
PidTagSearchFolderTemplateId (section 2.2.1.2.2)	2 (Unread Messages template, as described in section 2.2.3.1)
PidTagSearchFolderId (section 2.2.1.2.1)	cb: 16 lpb: 757154C8C1DFC14C91DE09C2044D2D1C
PidTagSearchFolderDefinition (section 2.2.1.2.8)	cb: 922 lpb: 041000004800000000000000000000000 0001000000003E00000001000000BCCD 87182E000000C4CD8718000000000A19 D6BCC8B44A4CBF5DF63A922E170C0100 14E20014EE879243A1A829B0620DBD89 0000020DEFA80000000000000000000000 020000000000000000007000000002000000 03000000020001001E001A001E001A00 100049504D2E4170706F696E746D656E 740002000000030000002000010001E00 1A001E001A000C0049504D2E436F6E74 6163740002000000030000000020001000 1E001A001E001A000D0049504D2E4469 73744C697374400020000000300000002 0001001E001A001E001A000D0049504D 2E41637469766974790002000000000300 0000020001001E001A001E001A000F00 49504D2E537469636B794E6F74650002 0000000030000000000001001E001A001E 001A00090049504D2E5461736B36B000200 00003000000020001001E001A001E00 1A000A0049504D2E5461736B2E000000 000002000000000000000080000000400 00000500000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD890000020DEFAE00000400 00000500000000201090E0201090E2E00

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Property name	Value
	000000000A19D6BCC8B44A4CBF5DF63A 922E170C01004A0BB9D92C2CA846B335 575CBBF054920000016400020000040 0 0000050000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD890000020DD13300000400 0000050000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD890000020DEFAC00000400 0000050000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD8900000210B4D200000400 0000050000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD8900000210B4D300000400 0000050000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD8900000210B4D400000400 0000050000000201090E0201090E2E00 000000000A19D6BCC8B44A4CBF5DF63A 922E170C010014E20014EE879243A1A8 29B0620DBD8900000210B4D100000100 0000020000000600000000000000300 070E01000000060000000100000003009710010000000000000
PidTagSearchFolderStorageType (section 2.2.1.2.6)	72 (0x48, Flags **B** and **E**)
PidTagSearchFolderTag (section 2.2.1.2.3)	1045439171
PidTagSearchFolderEfpFlags (section 2.2.1.2.7)	0

The value of the **PidTagSearchFolderDefinition** property is interpreted as described in section 2.2.1.2.8:

Field name	Value
Version	0x00001004
A	0
B	1 (The **FolderList2** field contains data.)
C	0
D	0
E	1 (The **SearchRestriction** field exists and contains data that defines the search

Field name	Value
	criteria.)
F	0
G	0
H	0
I	0
J	0
K	0
L	0
NumericalSearch	0x00000000
TextSearchLength	0x00
SkipBlock1	0x00000000
DeepSearch	0x00000001
FolderList1Length	0x00
FolderList2Length	0x0000003E
FolderList2	01000000BCCD87182E000000C4CD8718000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD890000020DEFA80000 **EntryList** structure ([MS-OXCDATA] section 2.3.1): ▪ **EntryCount**: 0x00000001 ▪ **Pad**: 0x1887CDBC ▪ **EntryLength**: 0x0000002E, 0x1887CDC4 ▪ **EntryIDs**: 000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD890000020DEFA80000
SkipBlock2	0x00000000
SearchRestriction	00000000020000000000000007000000020000003000000020001001E001A001E001A00100049504D2E4170706F696E746D656E740002000000030000000200001001E001A001E001A000C0049504D2E436F6E746163740002000000030000000200001001E001A001E001A000D0049504D2E446973744C69737400020000000300000000020001001E001A001E001A000D0049504D2E416374697669747900020000000300000000020001001E001A001E001A000F0049504D2E537469636B794E6F746500020000000300000000001001E001A001E001A00090049504D2E5461736B6B00020000000300000020001001E001A001E001A000A0049504D2E5461736B2E00000000000200000000000000800000040000005000000020109 0E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD890000020DEFAE00000400000050000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C01004A0BB9D92C2CA846B335575CBBF05492000001640002000004000000050000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD890000020DD1330000040000005000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE87

Field name	Value
	9243A1A829B0620DBD890000020DEFAC0000040000000050000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD8900000210B4D2000004000000050000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD8900000210B4D3000004000000050000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD8900000210B4D4000004000000050000000201090E0201090E2E00000000000A19D6BCC8B44A4CBF5DF63A922E170C010014E20014EE879243A1A829B0620DBD8900000210B4D100000100000002000000060000000000000000300070E01000000060000000100000003009710010000000

(The **Restriction** structure, as described in section 2.2.1.2.8.2) |
| **SkipBlock3** | 0x00000000 |

5   Security

5.1   Security Considerations for Implementers

There are no security considerations beyond those specified in [MS-OXCMSG] and [MS-OXCFOLD].

5.2   Index of Security Parameters

None.

6 Appendix A: Product Behavior

The information in this specification is applicable to the following Microsoft products or supplemental software. References to product versions include released service packs:

- Microsoft® Exchange Server 2003

- Microsoft® Exchange Server 2007

- Microsoft® Exchange Server 2010

- Microsoft® Office Outlook® 2003

- Microsoft® Office Outlook® 2007

- Microsoft® Outlook® 2010

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

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

<1> Section 2.2.1: Exchange 2003, Exchange 2007, and Exchange 2010 ignore the search folder definition message.

<2> Section 2.2.1.2.7: Office Outlook 2003, Office Outlook 2007, and Outlook 2010 set the **b** field of the **ExtendedFlags** subproperty of the search folder container to 0x1 even if the value of the **PidTagSearchFolderEfpFlags** property ([MS-OXPROPS] section 2.1050) of the search folder definition message is 0x00000000. If the value of the **PidTagSearchFolderTemplateId** property (section 2.2.1.2.2) is 0x00000003 or 0x00000004, Office Outlook 2003, Office Outlook 2007, and Outlook 2010 set the **b** field to 0x2, even if the value of the **PidTagSearchFolderEfpFlags** property is 0x00000000.

<3> Section 2.2.2.1.2: Office Outlook 2003, Office Outlook 2007, and Outlook 2010 set the **b** field to 0x1 even if the **PidTagSearchFolderEfpFlags** property (section 2.2.1.2.7) is set to 0x00000000. If the value of the **PidTagSearchFolderTemplateId** property (section 2.2.1.2.2) is 0x00000003 or 0x00000004, Office Outlook 2003, Office Outlook 2007, and Outlook 2010 set the **b** field to 0x2, even if **PidTagSearchFolderEfpFlags** is set to 0x00000000.

<4> Section 2.2.3: The Mail Received This Week template is not supported in Office Outlook 2007 and Outlook 2010.

<5> Section 2.2.3: The Categorized template is not supported in Office Outlook 2003.

<6> Section 2.2.3.2: In Office Outlook 2003, the following folders are excluded by the Marked for Followup template: Failed Sync Items folder, Deleted Items folder, and Junk E-mail folder.

<7> Section 2.2.3.4: In Office Outlook 2003, the following folders are excluded by the Important Mail template: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Drafts folder, Outbox folder, and Sent Items folder.

<8> Section 2.2.3.11: In Office Outlook 2003, the following folders are excluded by the With Attachments template: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Drafts folder, Outbox folder, and Sent Items folder.

<9> Section 2.2.3.13: In Office Outlook 2003, the following folders are excluded by the With Specific Words template: Failed Sync Items folder, Deleted Items folder, Junk E-mail folder, Drafts folder, Outbox folder, and Sent Items folder.

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7   Change Tracking

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

8 Index

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