

[MS-OXOSFLD]: Special Folders Protocol Specification

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Revision Summary

Date	Revision History	Revision Class	Comments
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04/25/2008	0.2		Revised and updated property names and other technical content.
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04/10/2009	2.0		Updated technical content and applicable product releases.
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02/10/2010	3.2	Minor	Updated the technical content.
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1 Introduction

The Special Folders Protocol is used to create and open a folder that is part of the set of default folders that store particular types of data within a **mailbox**. The Special Folders Protocol extends the Folder Object Protocol, which is described in [\[MS-OXCFOLD\]](#).

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 [\[MS-GLOS\]](#):

little-endian
remote procedure call (RPC)

The following terms are defined in [\[MS-OXGLOS\]](#):

calendar
Calendar folder
Calendar object
client-side rule
Common Views folder
contact
Contact object
Contacts folder
Container class
conversation action
Deferred Action Message (DAM)
Deferred Error Message (DEM)
delegate
Deleted Items folder
Drafts folder
entry ID
folder associated information (FAI)
Folder object
Inbox folder
Journal object
Junk E-mail folder
Junk E-mail rule
locale
mailbox
message class
Message object
Note object
Outbox folder
Really Simple Syndication (RSS)
Receive folder
remote operation (ROP)
restriction
Root folder
ROP request
ROP response
search criteria

search folder
Sent Items folder
Server object
Server object handle
special folder
store
Store object
Task object

The following terms are specific to this document:

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-DTYP] Microsoft Corporation, "[Windows Data Types](#)".

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

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

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

[MS-OXODLGT] Microsoft Corporation, "[Delegate Access Configuration Protocol Specification](#)".

[MS-OXOFLAG] Microsoft Corporation, "[Informational Flagging Protocol Specification](#)".

[MS-OXOPFFB] Microsoft Corporation, "[Public Folder-Based Free/Busy Protocol Specification](#)".

[MS-OXORMDR] Microsoft Corporation, "[Reminder Settings Protocol Specification](#)".

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

[MS-OXPFOAB] Microsoft Corporation, "[Offline Address Book \(OAB\) Public Folder Retrieval 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

- [MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)".
- [MS-OXCPRPT] Microsoft Corporation, "[Property and Stream Object Protocol Specification](#)".
- [MS-OXCRPC] Microsoft Corporation, "[Wire Format Protocol Specification](#)".
- [MS-OXCSPAM] Microsoft Corporation, "[Spam Confidence Level Protocol Specification](#)".
- [MS-OXCSYNC] Microsoft Corporation, "[Mailbox Synchronization Protocol Specification](#)".
- [MS-OXGLOS] Microsoft Corporation, "[Exchange Server Protocols Master Glossary](#)".
- [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-OXORSS] Microsoft Corporation, "[RSS Object Protocol Specification](#)".
- [MS-OXORULE] Microsoft Corporation, "[E-Mail Rules Protocol Specification](#)".
- [MS-OXOSRCH] Microsoft Corporation, "[Search Folder List Configuration Protocol Specification](#)".

1.3 Overview

The Special Folders Protocol is used to create and open a folder that is part of the set of default folders within a mailbox. Each of these **special folders** stores a particular type of **Message object**. For example, there is a special folder for e-mail messages, another for appointments, and another for **contacts (3)**. A complete list of the special folders, along with descriptions and the type of data contained in each special folder, is provided in section [2.2.1](#).

Each special folder has an identifier. The identifier ensures that the same special folder will continue to be used to store a particular type of Message object after the folder is created.

The Special Folders Protocol extends the Folder Object Protocol by defining additional constraints and adaptations for creating and accessing special folders. For information about the Folder Object Protocol, see [\[MS-OXCFOLD\]](#).

1.4 Relationship to Other Protocols

The Special Folders Protocol extends the Folder Object Protocol, and, therefore, has the same dependencies. For information about the Folder Object Protocol, see [\[MS-OXCFOLD\]](#).

1.5 Prerequisites/Preconditions

The Special Folders Protocol has the same prerequisites and preconditions as the Folder Object Protocol. For information about the Folder Object Protocol, see [\[MS-OXCFOLD\]](#).

1.6 Applicability Statement

A client can use the Special Folders Protocol to organize and store well-known object types in a user's mailbox.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

The Special Folders Protocol uses the same underlying transport as that used by the Folder Object Protocol, as specified in [\[MS-OXCFOLD\]](#).

2.2 Message Syntax

2.2.1 List of Special Folders

The set of folders that are special folders, along with the **Container class** for each folder where applicable and references for further information, are listed in the following table.

Special folder name	Description	Container class	More information
Root	The store hierarchy's top-level folder, which contains all other Folder objects in that store.	None	[MS-OXCSTOR]
Finder	Contains the default search folders (2) .	None	[MS-OXOSRCH]
Freebusy Data	Contains the free/busy data of the mailbox's owner.	None	[MS-OXOPFFB]
Top of Personal Folders	The top folder of the interpersonal message hierarchy, which contains user data folders, including most special folders (2), such as the Inbox folder .	None	[MS-OXCSTOR]
Deleted Items	The default location for objects that have been deleted.	"IPF.Note"	[MS-OXOMSG]
Outbox	Outgoing e-mail Message objects are placed in this folder when the Message object is sent.	"IPF.Note"	[MS-OXOMSG]
Sent Items	The default location in which copies of e-mail Message objects are placed after they have been submitted (sent).	"IPF.Note"	[MS-OXOMSG]
Inbox	The default location for incoming (received) e-mail Message objects.	"IPF.Note"	[MS-OXOMSG]
Common Views	Contains the data for default views that are standard for the message store and that can be used by any user of a client accessing the message store.	None	None
Personal Views	Contains the data for views defined by a particular user.	None	None
Deferred Action	Contains any Deferred Action Message (DAM) or Deferred Error	None	[MS-

Special folder name	Description	Container class	More information
	Message (DEM) that results from the execution of client-side rules .		OXORULE
Calendar	Contains Calendar objects , such as appointments.	"IPF.Appointment"	[MS- OXOCAL]
Contacts	Contains Contact objects .	"IPF.Contact"	[MS- OXOCNTC]
Journal	Contains Journal objects .	"IPF.Journal"	[MS- OXOJRNL]
Notes	Contains Note objects .	"IPF.StickyNote"	[MS- OXONOTE]
Tasks	Contains Task objects .	"IPF.Task"	[MS- OXOTASK]
Reminders	Search folder (2) that supports reminder functionality.	"Outlook.Reminder"	[MS- OXORMDR]
Drafts	The default location for composed e-mail Message objects that have been saved but not sent.	"IPF.Note"	[MS- OXOMSG]
Conflicts	Contains Message objects that indicate synchronization conflicts between client and server.	"IPF.Note"	[MS- OXCSYNC]
Sync Issues	Contains folders that contain messages that indicate particular issues encountered during synchronization between client and server.	"IPF.Note"	[MS- OXCSYNC]
Local Failures	Contains messages that indicate client-side synchronization failures.	"IPF.Note"	[MS- OXCSYNC]
Server Failure	Contains messages that indicate server-side synchronization failures.	"IPF.Note"	[MS- OXCSYNC]
Junk E-mail	Default location for e-mail Message objects determined to be junk e-mail by a Junk E-mail rule .	"IPF.Note"	[MS- OXCSPPAM]
RSS Feeds	Contains Really Simple Syndication (RSS) feed messages.	"IPF.Note.OutlookHomepage"	[MS- OXORSS]
Tracked Mail Processing	Search folder (2) that contains flagged objects.	"IPF.Note"	[MS- OXOFLAG]
To-Do	Search folder (2) used for tracking Task objects.	"IPF.Task"	[MS- OXOTASK]
Conversation Action Settings	Contains folder associated information (FAI) messages that are used for persisting conversation actions .	"IPF.Configuration"	[MS- OXOCFG]

2.2.2 Identifiers for Special Folders

The value that identifies a special folder is obtained from one of the following:

- The folder IDs (FIDs) ([\[MS-OXCDATA\]](#) section 2.2.1.1) returned in a **RopLogon remote operation (ROP)** response ([\[MS-OXCROPS\]](#) section 2.2.3.1), as specified in [\[MS-OXCSTOR\]](#) section 2.2.1.1.3.2. These FIDs identify the following folders: **Root folder**, Finder folder, Top of Personal Folders folder, **Deleted Items folder**, **Outbox folder**, **Sent Items folder**, Inbox folder, **Common Views folder**, Personal Views folder, and Deferred Action folder.
- One of several binary properties on the Root folder or the Inbox folder. Each property contains only a single **entry ID**. For more details, see section [2.2.3](#).
- The **PidTagAdditionalRenEntryIds** property (section [2.2.4](#)) on the Inbox folder. The property contains an array of entry IDs.
- The **PidTagAdditionalRenEntryIdsEx** property (section [2.2.5](#)) on the **Store object**. The property contains binary data in its own format, allowing for multiple entry IDs.
- The **PidTagFreeBusyEntryIds** property ([\[MS-OXOPFFB\]](#) section 2.2.2.1) on the Root folder or the Inbox folder. Indexed value 3 contains the entry ID for the Freebusy Data folder.
- The FID returned by the **RopGetReceiveFolder ROP response** ([\[MS-OXCROPS\]](#) section 2.2.3.2). This FID is for the **Receive folder**.

Unless otherwise noted, the entry IDs MUST be converted to FIDs by using the **RopIdFromLongTermId** ROP ([\[MS-OXCROPS\]](#) section 2.2.3.9) before they are used with the Folder Object Protocol, as specified in [\[MS-OXCFOLD\]](#), to open a special folder.

2.2.3 Binary Identification Properties

Each binary identification property contains the identifier of a special folder. These properties are read from or written to either the Inbox folder or the Root folder. The implementation MUST use the Inbox folder when the mailbox is that of the owner, and it MUST use the Root folder when the mailbox is that of a **delegate**. For details about delegates, see [\[MS-OXODLGT\]](#).

These properties along with their descriptions, are listed in the following table. Each property is a **PtypBinary** ([\[MS-OXCADATA\]](#) section 2.11.1).

Property	Description
PidTagIpmAppointmentEntryId ([MS-OXPROPS] section 2.811)	Contains the entry ID of the Calendar folder
PidTagIpmContactEntryId ([MS-OXPROPS] section 2.812)	Contains the entry ID of the Contacts folder
PidTagIpmJournalEntryId ([MS-OXPROPS] section 2.814)	Contains the entry ID of the Journal folder
PidTagIpmNoteEntryId ([MS-OXPROPS] section 2.815)	Contains the entry ID of the Notes folder
PidTagIpmTaskEntryId ([MS-OXPROPS] section 2.816)	Contains the entry ID of the Tasks folder
PidTagRemindersOnlineEntryId ([MS-OXPROPS] section 2.970)	Contains the entry ID of the Reminders folder
PidTagIpmDraftsEntryId ([MS-OXPROPS] section 2.813)	Contains the entry ID of the Drafts

Property	Description
	folder

2.2.4 PidTagAdditionalRenEntryIds Property

Type: **PtypMultipleBinary**

The **PidTagAdditionalRenEntryIds** property ([\[MS-OXPROPS\]](#) section 2.580) of the Inbox folder specifies the identifiers of several special folders. Each identifier is an entry ID.

The index into the array contained in the **PidTagAdditionalRenEntryIds** property for each of these special folders is listed in the following table. The implementation MUST ignore and MUST preserve data at other indexes.

Index	Folder identified
0x0000	Conflicts
0x0001	Sync Issues
0x0002	Local Failures
0x0003	Server Failures
0x0004	Junk E-mail

2.2.5 PidTagAdditionalRenEntryIdsEx Property

Type: **PtypBinary**

The **PidTagAdditionalRenEntryIdsEx** property ([\[MS-OXPROPS\]](#) section 2.581) of the Store object specifies the identifiers of several special folders. If present, the value of this property is an array of **PersistData** structures (section [2.2.5.1](#)), each of which contains the entry ID of a special folder.

2.2.5.1 PersistData Structure

The fields of the **PersistData** structure are specified in the following table.

Field name	Type	Size	Description
PersistID	WORD ([MS-DTYP])	2	Type identifier value for this PersistData structure. SHOULD be one of the values specified in the following table.
DataElementsSize	WORD	2	The size, in bytes, of the DataElements field.
DataElements	Array of PersistElement structures	variable	0 (zero) or more PersistElement structures (section 2.2.5.2).

The value of the **PersistID** field SHOULD be one of those listed in the following table. If a **PersistData** structure is encountered where the value of the **PersistID** field is not known to the implementation, the implementation MUST ignore that **PersistData** structure and continue processing until either a value of 0x0000 (PERSIST_SENTINEL) in the **PersistID** field is encountered or the end of the data stream is encountered. [<1>](#)

Value name	Value	Meaning
RSF_PID_RSS_SUBSCRIPTION	0x8001	Indicates that the structure contains data for the RSS Feeds folder.
RSF_PID_SEND_AND_TRACK	0x8002	Indicates that the structure contains data for the Tracked Mail Processing folder.
RSF_PID_TODO_SEARCH	0x8004	Indicates that the structure contains data for the To-Do folder.
RSF_PID_CONV_ACTIONS	0x8006	Indicates that the structure contains data for the Conversation Action Settings folder.
RSF_PID_COMBINED_ACTIONS	0x8007	This value is reserved.
RSF_PID_SUGGESTED_CONTACTS	0x8008	Indicates that the structure contains data for the Suggested Contacts folder.
PERSIST_SENTINEL	0x0000	Indicates that the implementation MUST stop processing further PersistData structures. PERSIST_SENTINEL is optional; if it is not included, processing continues to the end of the data stream.

2.2.5.2 PersistElement Structure

The fields of the **PersistElement** structure are specified in the following table.

Field name	Type	Size	Description
ElementID	WORD ([MS-DTYP])	2	Type identifier value for this PersistElement structure. SHOULD be one of the values given in the following table.
ElementDataSize	WORD	2	The size, in bytes, of the ElementData field.
ElementData	BYTE ([MS-DTYP]) array of binary data	variable	The data corresponding to the value of the PersistID field of the PersistData structure (section 2.2.5.1).

The value of the **ElementID** field SHOULD be one of those listed in the following table. If a **PersistElement** structure is encountered where the value of the **ElementID** field is not known to the implementation, the implementation MUST ignore that **PersistElement** structure and continue processing further **PersistElement** structures until either a value of 0x0000 (ELEMENT_SENTINEL) in the **ElementID** field is encountered or the end of the data stream is encountered. The implementation MUST then continue processing additional **PersistData** structures until either a value of 0x0000 (PERSIST_SENTINEL) in the **PersistID** field is encountered or the end of the data stream is encountered.

Value name	Value	Value of the ElementDataSize field	Meaning
RSF_ELID_HEADER	0x0002	0x0004	Indicates that the ElementData field contains a value of type DWORD ([MS-DTYP]). The interpretation of this value depends on the value of the PersistID field in the current PersistData structure. For all PersistID types

Value name	Value	Value of the ElementDataSize field	Meaning
			specified in this section, this value MUST be 0 (zero).
RSF_ELID_ENTRYID	0x0001	variable	Indicates that the PersistElement structure contains the entry ID of the folder indicated by the value of the PersistID field of the PersistData structure.
ELEMENT_SENTINEL	0x0000	0x0000	Indicates that the implementation MUST stop processing further PersistElement structures for the current PersistData structure.

2.2.6 Inbox Identification

To identify the Receive folder, an implementation MUST use the **RopGetReceiveFolder** ROP ([\[MS-OXCROPS\]](#) section 2.2.3.2) of the Store Object Protocol to get the FID ([\[MS-OXCADATA\]](#) section 2.2.1.1) for the default Receive folder for the Store object. For details about the Store Object Protocol, see [\[MS-OXCSTOR\]](#).

2.2.7 PidTagContainerClass Property

Type: **PtypString**

The **PidTagContainerClass** property ([\[MS-OXPROPS\]](#) section 2.703), located on the special folder, specifies the type of Message object that the folder contains. An implementation MUST set this property to the string that specifies the correct Container class for the special folder, as specified in section [2.2.1](#).

3 Protocol Details

3.1 Common Details

Special folders can be opened or created by clients and servers. Except where noted, this section defines constraints to which clients and servers adhere when interacting with special folders. In all other respects, clients and servers operate as specified in [\[MS-OXCFOLD\]](#).

3.1.1 Abstract Data Model

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

3.1.1.1 Folder Hierarchy

The following outline depicts a hierarchy for special folders that are within the Root folder, which is the top-level folder, in a store:

1. Deferred Action Folder
2. Finder
3. Reminders
4. Tracked Mail Processing
5. To-Do
6. Common Views
7. Personal Views
8. Top of Personal Folders
 1. Deleted Items
 2. Outbox
 3. Sent Items
 4. Inbox
 5. Calendar
 6. Contacts
 7. Journal
 8. Notes
 9. Tasks
 10. Drafts

11. Sync Issues
 1. Conflicts
 2. Local Failures
 3. Server Failures
12. Junk E-mail
13. RSS Feeds
14. Conversation Action Settings

3.1.1.2 Search Criteria for Search Special Folders

The Reminders folder, the To-Do folder, and the Tracked Mail Processing folder are search folders (2), as specified in [\[MS-OXCFOLD\]](#), and the functionality supported by these folders depends on specific **search criteria**. The search criteria are set on each search folder (2) when the folder is created. Complete details about setting the search criteria are specified in section [3.1.4.1](#), and an abstracted outline is as follows.

For the Reminders folder, include all Message objects in any folder contained within the Top of Personal Folders folder, with the following **restrictions (2)**:

- The following special folders are excluded from the search:
 - Deleted Items folder
 - **Junk E-mail folder**
 - Drafts folder
 - Outbox folder
 - Conflicts folder
 - Local Failures folder
 - Server Failures folder
 - Sync Issues folder
- The value of the **PidTagMessageClass** property ([\[MS-OXCMSG\]](#) section 2.2.1.3) does not contain a string with the prefix "IPM.Schedule."
- The value of the **PidTagMessageFlags** property ([\[MS-OXCMSG\]](#) section 2.2.1.6) does not have the mfSubmitted flag set (that is, submitted Message objects are excluded).
- The value of the **PidLidReminderSet** property ([\[MS-OXORMDR\]](#) section 2.2.1.1) is set to the Boolean value 1, or the value of the **PidLidRecurring** property ([\[MS-OXOCAL\]](#) section 2.2.1.12) is set to the value 1.

For the To-Do folder, include all Message objects in any folder contained within the Top of Personal Folders folder, with the following restrictions (2):

- The following special folders are excluded from the search:

- Deleted Items folder
- Junk E-mail folder
- Drafts folder
- Outbox folder
- Conflicts folder
- Local Failures folder
- Server Failures folder
- Sync Issues folder
- The **message class** does not start with "IPM.Appointment" or "IPM.Activity" or "IPM.StickyNote".
- Any one of the following is true:
 - The Message object is a Task object, as specified in [\[MS-OXOTASK\]](#), and the Task object is owned and not accepted and the Task object was sent to the currently logged-on user.
 - The value of the Message object's **PidTagFollowupIcon** property ([\[MS-OXOFLAG\]](#) section 2.2.1.2) is greater than 0.
 - The value of the Message object's **PidTagToDoItemFlags** property ([\[MS-OXOFLAG\]](#) section 2.2.1.6) includes the IsToDoItem flag.
 - The Message object is an object with the complete flag set to TRUE or a completed task.

For the Tracked Mail Processing folder, include all Message objects in any folder contained within the Top of Personal Folders folder, with the following restrictions (2):

- The following special folders are excluded from the search:
 - Deleted Items folder
 - Junk E-mail folder
 - Drafts folder
 - Outbox folder
 - Conflicts folder
 - Local Failures folder
 - Server Failures folder
 - Sync Issues folder
- The **PidTagSwappedToDoStore** property ([\[MS-OXOFLAG\]](#) section 2.2.1.8) exists on the object.
- The value of the **PidTagMessageFlags** property does not include the mfUnsent or the mfSubmitted flags.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

Before an implementation tries to read or write Message objects within a special folder, the implementation MUST obtain a handle to the special folder by using the following steps:

1. The implementation MUST try to open the special folder by using the ID of the special folder and the Folder Object Protocol, as specified in [\[MS-OXCFOLD\]](#). The ID of the special folder is obtained as specified in section [2.2.2](#).
2. If the ID cannot be retrieved, or the folder cannot be opened, or the special folder does not exist within the store, the implementation MUST create the special folder as specified in section [3.1.4.1](#).

3.1.4.1 Folder Creation

The folder hierarchy specified in section [3.1.1.1](#) also specifies the dependency chain for special folder creation. Before a special folder can be created, the Store object and the Root folder MUST exist and the parent folder in this hierarchy MUST exist. A handle to the Store object that contains the folder MUST be obtained by opening the Store object, as specified in [\[MS-OXCSTOR\]](#).

To create a special folder, an implementation MUST do the following:

1. Open the parent folder of the desired special folder, as specified in the folder hierarchy in section [3.1.1.1](#), by using the Folder Object protocol.
2. Create the folder in the opened parent folder, by using the Folder Object Protocol with the special folder name for the implementation's **locale**, reusing the existing folder if one already exists by that name. The FID that is returned MUST be converted to an entry ID by using a **RopLongTermIdFromId ROP request** ([\[MS-OXCROPS\]](#) section 2.2.3.8). The resulting entry ID of the new folder is used in the remaining steps.
3. Store the entry ID at the correct location, specified in section [2.2.2](#), for the particular special folder.
4. If applicable, set the **PidTagContainerClass** property (section [2.2.7](#)) to the appropriate value.
5. Perform any folder-specific initialization, as specified in sections [3.1.4.1.1](#) through [3.1.4.1.4](#).

3.1.4.1.1 Creating the Reminders Folder

To complete creation of the Reminders folder, an implementation SHOULD [<2>](#) set the search criteria for the Reminders folder. The search criteria are composed of restriction (2) structures, as specified in [\[MS-OXCDATA\]](#) section 2.12. The search criteria are set by using the Folder Object Protocol, as specified in [\[MS-OXCFOLD\]](#), such that the Top of Personal Folders folder is the only container included in the search and the search applies a **RES_AND** restriction (2) with the following two subclauses.

First, a **RES_AND** restriction (2) with any of the following subclauses. Each of these subclauses is included in the **RES_AND** restriction (2) only if the special folder exists within the store. For example, if only the Drafts folder exists, then only the **RES_PROPERTY** subclause for the Drafts folder is included in the **RES_AND** restriction (2).

- A **RES_PROPERTY** restriction (2) with a relational operator (specified by the **RelOp** field) value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property ([\[MS-OXPFOAB\]](#) section 2.2.1.8) with the FID ([\[MS-OXCDATA\]](#) section 2.2.1.1)/message ID (MID) ([\[MS-OXCDATA\]](#) section 2.2.1.2) pair of the Deleted Items folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Junk E-mail folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Drafts folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Outbox folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Conflicts folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Local Failures folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Server Failures folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Sync Issues folder.

Second, a **RES_AND** restriction (2) with the following three subclauses:

1. A **RES_NOT** restriction (2) that contains a **RES_AND** restriction (2) with the following two subclauses:
 - A **RES_EXIST** restriction (2) that specifies the **PidTagMessageClass** property ([\[MS-OXCMSG\]](#) section 2.2.1.3).
 - A **RES_CONTENT** restriction (2) with the **FuzzyLevelLow** field set to **FL_PREFIX**, comparing the value of **PidTagMessageClass** property to the string value "IPM.Schedule".
2. A **RES_BITMASK** restriction (2) with the **BitMapRelOp** field set to **BMR_EQZ** to compare the value of the **PidTagMessageFlags** property ([\[MS-OXCMSG\]](#) section 2.2.1.6) to the **ULONG** ([\[MS-DTYP\]](#)) value **mfSubmitted**.
3. A **RES_OR** restriction (2) with the following two subclauses:
 1. A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_EQ**, comparing the value of the **PidLidReminderSet** property ([\[MS-OXORMDR\]](#) section 2.2.1.1) to a Boolean value of 1.
 2. A **RES_AND** restriction (2) with the following two subclauses:
 - A **RES_EXIST** restriction (2) that specifies the **PidLidRecurring** property ([\[MS-OXOCAL\]](#) section 2.2.1.12).

- A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_EQ, comparing the value of the **PidLidRecurring** property to the Boolean value of 1.

The search SHOULD provide the client with the information when requested, include child folders, and run without content indexing.

3.1.4.1.2 Creating the To-Do Folder

To complete creation of the To-Do folder, an implementation SHOULD<3> set the search criteria for the To-Do folder. The search criteria are composed of restriction (2) structures, as specified in [\[MS-OXCDATA\]](#) section 2.12. The search criteria are set by using the Folder Object Protocol, as specified in [\[MS-OXCFOOLD\]](#), such that the Top of Personal Folders folder is the only container included in the search and the search applies a **RES_AND** restriction with the following two subclauses.

First, a **RES_AND** restriction with the following three subclauses:

1. A **RES_NOT** restriction (2) with a **RES_CONTENT** subclause that compares the **PidTagMessageClass** property ([\[MS-OXCMSG\]](#) section 2.2.1.3) to the string value "IPM.appointment". The **RES_CONTENT** subclause has the **FuzzyLevelLow** field set to FL_PREFIX and the **FuzzyLevelHigh** field set to FL_IGNORECASE.
2. A **RES_NOT** restriction (2) with a **RES_CONTENT** subclause that compares the **PidTagMessageClass** property to the string value "IPM.Activity". The **RES_CONTENT** subclause has the **FuzzyLevelLow** field set to FL_PREFIX and the **FuzzyLevelHigh** field set to FL_IGNORECASE.
3. A **RES_NOT** restriction (2) with a **RES_CONTENT** subclause that compares the **PidTagMessageClass** property to the string value "IPM.StickyNote". The **RES_CONTENT** subclause has the **FuzzyLevelLow** field set to FL_PREFIX and the **FuzzyLevelHigh** field set to FL_IGNORECASE.

Second, a **RES_AND** restriction (2) with the following two subclauses:

1. A **RES_AND** restriction (2) with any of the following subclauses. Each of these subclauses is included in the **RES_AND** restriction (2) only if the special folder exists within the store. For example, if only the Drafts folder exists, then only the **RES_PROPERTY** subclause for the Drafts folder is included in the **RES_AND** restriction:
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property ([\[MS-OXPFOAB\]](#) section 2.2.1.8) with the FID ([\[MS-OXCDA\]](#) section 2.2.1.1)/MID ([\[MS-OXCDA\]](#) section 2.2.1.2) pair of the Deleted Items folder.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Junk E-mail folder.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Drafts folder.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Outbox folder.
 - A **RES_PROPERTY** restriction with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Conflicts folder.

- A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Local Failures folder.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Server Failures folder.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Sync Issues folder.
2. A **RES_OR** restriction (2) with the following four subclauses:
1. A **RES_AND** restriction (2) with the following two subclauses:
 1. A **RES_OR** restriction (2) with the following two subclauses:
 - A **RES_CONTENT** restriction (2) with the **FuzzyLevelLow** field set to FL_FULLSTRING and the **FuzzyLevelHigh** field set to FL_IGNORECASE comparing the value of the **PidTagMessageClass** property to the string value "IPM.Task".
 - A **RES_CONTENT** restriction (2) with the **FuzzyLevelLow** field set to FL_PREFIX and the **FuzzyLevelHigh** field set to FL_IGNORECASE comparing the value of the **PidTagMessageClass** property to the string value "IPM.Task".
 2. A **RES_NOT** restriction (2) with a **RES_AND** subclause. The **RES_AND** subclause has the following two subclauses:
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_EQ, comparing the value of the **PidLidTaskState** ([\[MS-OXPROPS\]](#) section 2.328) property to the **LONG** ([\[MS-DTYP\]](#)) value 2.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidLidTaskAccepted** property ([\[MS-OXOTASK\]](#) section 2.2.2.2.7) to the binary value 1.
 2. A **RES_AND** restriction (2) with the following two subclauses:
 - A **RES_EXIST** restriction (2) that specifies the **PidTagFollowupIcon** property ([\[MS-OXOFLAG\]](#) section 2.2.1.2).
 - A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_GT, comparing the value of the **PidTagFollowupIcon** property to the **LONG** value 0 (zero).
 3. A **RES_AND** restriction (2) with the following two subclauses:
 - A **RES_EXIST** restriction (2) that specifies the **PidTagToDoItemFlags** property ([\[MS-OXOFLAG\]](#) section 2.2.1.6).
 - A **RES_BITMASK** restriction (2) with the **BitMapRelOp** field set to BMR_NEZ to compare the value of the **PidTagToDoItemFlags** property to the **ULONG** ([\[MS-DTYP\]](#)) value 0x00000001.
 4. A **RES_OR** restriction (2) with the following two subclauses:
 1. A **RES_AND** restriction (2) with the following three subclauses:
 1. A **RES_OR** restriction (2) with the following two subclauses:

- A **RES_NOT** restriction (2) with a **RES_EXIST** subclause that specifies the **PidTagFollowupIcon** property.
 - A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_EQ**, comparing the value of the **PidTagFollowupIcon** property to the **LONG** value 0 (zero).
2. A **RES_EXIST** restriction (2) that specifies the **PidTagFlagStatus** property ([\[MS-OXOFLAG\]](#) section 2.2.1.1).
 3. A **RES_PROPERTY** restriction (2), with a relational operator value of **RELOP_EQ**, comparing the value of the **PidTagFlagStatus** property to the **LONG** value 1.
2. A **RES_AND** restriction (2) with the following two subclauses:
 - A **RES_EXIST** restriction (2) that specifies the **PidLidTaskStatus** property ([\[MS-OXOTASK\]](#) section 2.2.2.2).
 - A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_EQ**, comparing the value of the **PidLidTaskStatus** property to the **ULONG** value 2.

The search SHOULD provide the client with the information when requested, include child folders, and run without content indexing.

3.1.4.1.3 Creating the Tracked Mail Processing Folder

To complete creation of the Tracked Mail Processing folder, an implementation SHOULD<4> set the search criteria for the Tracked Mail Processing folder. The search criteria are composed of restriction (2) structures, as specified in [\[MS-OXCDATA\]](#) section 2.12. The search criteria are set by using the Folder Object Protocol, as specified in [\[MS-OXCFOLD\]](#), such that the Top of Personal Folders folder is the only container included in the search and the search applies a **RES_AND** restriction (2) with the following two subclauses.

First, a **RES_AND** restriction (2) with any of the following subclauses. Each of these subclauses is included in the **RES_AND** restriction (2) only if the special folder exists within the store. For example, if only the Drafts folder exists, then only the **RES_PROPERTY** subclause for the Drafts folder is included in the **RES_AND** restriction (2).

- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property ([\[MS-OXPROPS\]](#) section 2.913) with the FID ([\[MS-OXCADATA\]](#) section 2.2.1.1)/MID ([\[MS-OXCADATA\]](#) section 2.2.1.2) pair of the Deleted Items folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Junk E-mail folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Drafts folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Outbox folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Conflicts folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of **RELOP_NE**, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Local Failures folder.

- A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Server Failures folder.
- A **RES_PROPERTY** restriction (2) with a relational operator value of RELOP_NE, comparing the value of the **PidTagParentEntryId** property with the FID/MID pair of the Sync Issues folder.

Second, a **RES_AND** restriction (2) with the following two subclauses:

- A **RES_EXIST** restriction (2) that specifies the **PidTagSwappedToDoStore** property ([\[MS-OXOFLAG\]](#) section 2.2.1.8).
- A **RES_BITMASK** restriction (2) with the **BitMapRelOp** field set to of BMR_EQZ to compare the value of the **PidTagMessageFlags** property ([\[MS-OXPROPS\]](#) section 2.852) to the **ULONG** ([\[MS-DTYP\]](#)) value that is the bitwise OR combination of mfUnsent and mfSubmitted.

The search SHOULD provide the client with the information when requested, include child folders, and run without content indexing.

3.1.4.1.4 Creating Other Special Folders

If the special folder that is being created is one of the following:

- Deleted Items folder
- Junk E-mail folder
- Outbox folder
- Conflicts folder
- Local Failures folder
- Server Failures folder
- Sync Issues folder
- Drafts folder

An implementation MUST take the following additional steps:

1. Open the Reminders folder by using the ID of the special folder and the Folder Object Protocol. If this succeeds, perform the steps in section [3.1.4.1.1](#). The ID of the special folder is obtained as specified in section [2.2.2](#).
2. Open the To-Do folder by using the ID of the special folder and the Folder Object Protocol. If this succeeds, perform the steps in section [3.1.4.1.2](#).
3. Open the Tracked Mail Processing folder by using the ID of the special folder and the Folder Object Protocol. If this succeeds, perform the steps in section [3.1.4.1.3](#).

If the special folder that is being created is a Conversation Action Settings folder, an implementation MUST set the **PidTagAttributeHidden** property ([\[MS-OXCFOLD\]](#) section 2.2.2.2.1) of the Folder object to TRUE.

3.1.5 Message Processing Events and Sequencing Rules

An implementation **MUST** treat any failure to open the Root folder as a failure of the entire Special Folders Protocol. For all other special folders, an implementation **SHOULD** create the special folder if an attempt to open the folder fails or if the ID of the folder cannot be retrieved.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

The following examples illustrate the byte order of ROPs in a buffer that is being prepared for transmission. Note that the examples in this section show only the relevant portions of the specified ROPs; this is not the final byte sequence that gets transmitted over the wire. Also note that the data format for a multibyte field appears in **little-endian** format, with the **bytes** in the field presented from least significant to most significant.

Frequently, these ROP requests are packed with other ROP requests, compressed, obfuscated, and then packed in one or more **remote procedure calls (RPCs)**. These examples assume that the client has already successfully logged on to the server and has obtained any **Server object handles** that are to be used as inputs in the ROPs. For more information about RPCs, see [\[MS-OXCRPC\]](#).

Examples in this section use the following format for byte sequences. Each byte is expressed as a two-digit hexadecimal number.

```
0080: 45 4D 53 4D 44 42 2E 44-4C 4C 00 00 00 00 00 00
```

The value 0080 at the far left is the byte sequence's offset from the beginning of the buffer. Following the offset is a colon and then a series of up to 16 bytes. Here, the first byte (45) in the series is located 0x80 bytes (128 bytes) from the beginning of the buffer. The seventh byte (2E) in the series is located 0x86 bytes (134 bytes) from the beginning of the buffer. The dash between the eighth byte (44) and the ninth byte (4C) has no semantic value; it serves only to distinguish the eight-byte boundary for readability.

This byte sequence is followed by one or more lines that interpret it. In larger examples, the byte sequence is shown once in its entirety and then repeated in smaller chunks, with each smaller chunk interpreted separately.

When explaining the values of the **InputHandleIndex** and **OutputHandleIndex** fields, the example text describes the **Server object** that is referenced by the handle index. For more information about Server object handles, see [\[MS-OXCROPS\]](#) section 1.3.1.

4.1 Opening a Special Folder

Using the Calendar folder as an example, opening a special folder involves the following procedure:

1. Open the Inbox folder by using the Inbox folder's FID ([\[MS-OXCADATA\]](#) section 2.2.1.1) and the Folder Object Protocol, as described in [\[MS-OXCFOLD\]](#). This operation returns a Folder object.
2. Get the value of the **PidTagIpmAppointmentEntryId** property (section [2.2.3](#)) from the Inbox folder object returned in step 1 by using the Property and Stream Object Protocol, as described in [\[MS-OXCPRPT\]](#). This operation returns an entry ID for the Calendar folder.
3. Convert the entry ID returned in step 2 to a FID, as specified in section [2.2.2](#), and then open this folder by using this FID and the Folder Object Protocol. This operation returns a Folder object for the Calendar folder.

4.1.1 Client Request for Opening a Special Folder

A complete set of ROP requests to open the Calendar folder would look like the following.

0000: 02 01 00 01 01 00 00 00-01 42 0E 44 00

RopOpenFolder ([\[MS-OXCROPS\]](#) section 2.2.4.1)

RopId: 0x02

LogonId: 0

InputHandleIndex: 0 (Server object handle = 0x00000160)

FolderId: 0001-000001420e44

Note This is the FID ([\[MS-OXCDATA\]](#) section 2.2.1.1) of the Inbox folder to open.

OpenModeFlags: 0x00 Open existing folder

0000: 07 00 02 00 00 01 00 1D-00 14 00 49 67 03 00 F4
0010: 0F 02 01 72 66 1F 00 E5-36 1F 00 E6 36 1F 00 01
0020: 30 03 00 01 36 03 00 02-36 03 00 03 36 0B 00 0A
0030: 36 1F 00 13 36 02 01 16-36 02 01 D0 36 02 01 D1
0040: 36 02 01 D2 36 02 01 D3-36 02 01 D4 36 02 01 D5
0050: 36 02 01 D6 36 02 01 D7-36 02 11 D8 36 02 01 D9
0060: 36 03 00 DE 36 02 01 DF-36 02 01 E0 36 03 00 E1
0070: 36 02 11 E4 36 02 01 EB-36 02 01 DA 36

RopGetPropertiesSpecific ([\[MS-OXCROPS\]](#) section 2.2.8.3)

RopId: 0x07

LogonId: 1

InputHandleIndex: 1 (Server object handle = 0x000000E2)

PropertySizeLimit: 0x0000

WantUnicode: 0x0001 (TRUE)

PropertyValueCount: 29 (0x001D)

...

PidTagIpmAppointmentEntryId (section [2.2.3](#))

...

0000: 02 01 00 01 01 00 00 00-01 50 4D F6 00

RopOpenFolder

RopId: 0x02

LogonId: 1

InputHandleIndex: 0 (Server object handle = 0x00000160)

FolderId: 0001-000001504DF6

Note This is the FID ([\[MS-OXCDATA\]](#) section 2.2.1.1) for the Calendar folder to open.

OpenModeFlags: 0x00 Open existing folder

4.1.2 Server Response for Opening a Special Folder

```
0000: 02 01 00 00 00 00 00 00
```

RopOpenFolder ([\[MS-OXCROPS\]](#) section 2.2.4.1)

RopId: 0x02

OutputHandleIndex: 1 (Server object handle = 0x000000E2)

ReturnValue: Success (0x00000000)

HasRules: 0x00 (FALSE)

IsGhosted: 0x00 (FALSE)

Only 256 bytes dumped.

```
0000: 07 01 00 00 00 00 01 00-01 00 00 00 01 42 0E 41
0010: 00 3F 00 00 00 0A 0F 01-04 80 0A 0F 01 04 80 0A
0020: 0F 01 04 80 00 49 00 6E-00 62 00 6F 00 78 00 00
0030: 00 00 01 00 00 00 00 00-00 00 00 00 00 00 00 00
0040: 00 00 00 49 00 50 00 46-00 2E 00 4E 00 6F 00 74
0050: 00 65 00 00 00 0A 0F 01-04 80 00 2E 00 00 00 00
0060: 00 6A 3C B8 FA 3B A9 F0-46 B4 F4 E4 B6 C7 74 45
0070: 09 01 00 02 27 39 56 14-8B EF 4F 98 14 81 7E 2C
0080: 82 BD C2 00 00 01 50 4D-F6 00 00 00 2E 00 00 00
0090: 00 00 6A 3C B8 FA 3B A9-F0 46 B4 F4 E4 B6 C7 74
00a0: 45 09 01 00 02 27 39 56-14 8B EF 4F 98 14 81 7E
00b0: 2C 82 BD C2 00 00 01 50-4D F7 00 00 00 2E 00 00
00c0: 00 00 00 6A 3C B8 FA 3B-A9 F0 46 B4 F4 E4 B6 C7
00d0: 74 45 09 01 00 02 27 39-56 14 8B EF 4F 98 14 81
00e0: 7E 2C 82 BD C2 00 00 01-50 4D F8 00 00 00 2E 00
00f0: 00 00 00 00 6A 3C B8 FA-3B A9 F0 46 B4 F4 E4 B6
...
```

RopGetPropertiesSpecific ([\[MS-OXCROPS\]](#) section 2.2.8.3)

RopId: 0x07

InputHandleIndex: 1 (Server object handle = 0x000000E2)

ReturnValue: Success (0x00000000)

PropertyArray:

PropCount: 29

PidTagIpmAppointmentEntryId 46 bytes (section [2.2.3](#))

```
0000: 00 00 00 00 6A 3C B8 FA-3B A9 F0 46 B4 F4 E4 B6
0010: C7 74 45 09 01 00 02 27-39 56 14 8B EF 4F 98 14
```

```
0020: 81 7E 2C 82 BD C2 00 00-01 50 4D F6 00 00
...
```

Note The entry ID contains 00 00-01 50 4D F6 that is part of the FID ([\[MS-OXCDATA\]](#) section 2.2.1.1): 0001-000001504DF6 used in the **RopOpenFolder** ROP request that is shown in section [4.1.1](#).

```
0000: 02 01 00 00 00 00 00 00
```

RopOpenFolder

RopId: 0x02

OutputHandleIndex: 1 (Server object handle = 0x000000E2)

Note Successfully opened the Calendar folder, and the Calendar folder has the Server object handle 0x000000E2.

HasRules: 0x00 (FALSE)

IsGhosted: 0x00 (FALSE)

...

4.2 Creating a Special Folder

Using the Calendar folder as an example, creating a special folder involves the following procedure:

1. Open the parent folder, in this case the Top of Personal Folders folder, as specified in the folder hierarchy in section [3.1.1.1](#), by using the Top of Personal Folders FID ([\[MS-OXCDATA\]](#) section 2.2.1.1) and the Folder Object Protocol, as described in [\[MS-OXCFOLD\]](#). This operation returns a Folder object.
2. Create a new folder in the opened parent folder by using the Folder Object Protocol with the name "calendar" in English locales, reusing the existing folder if one already exists by that name. The entry ID of the newly created folder will be used in the following steps.
3. Open the Inbox folder by using the Inbox folder FID and the Folder Object Protocol. This operation returns a Folder object.
4. Set the value of the [PidTagIpmAppointmentEntryId](#) property (section [2.2.3](#)) on the Inbox Folder object returned in step 3 to the entry ID value of the folder created in step 2, by using the Property and Stream Object Protocol, as specified in [\[MS-OXCPRPT\]](#).
5. Set the value of the [PidTagContainerClass](#) property (section [2.2.7](#)) on the new Calendar folder to the value "IPF.Appointment".

4.2.1 Client Request for Creating a Special Folder

A complete set of ROP requests to create the Calendar folder would look like the following.

```
0000: 02 00 00 01 01 00 00 00-01 42 0E 41 00
```

RopOpenFolder ([\[MS-OXCROPS\]](#) section 2.2.4.1)

RopId: 0x02

LogonId: 0x00

InputHandleIndex: 0 (Server object handle = 0x00000059)

FolderId: 0001-000001420E41

Note The FID ([\[MS-OXCDATA\]](#) section 2.2.1.1) 0001-000001420E41 is for the Top of Personal Folders folder. This identifier is received from the **RopLogon** ROP ([\[MS-OXCROPS\]](#) section 2.2.3.1).

OpenModeFlags: 0x00 (ReadOnly)

...

```
0000: 1C 00 00 01 01 01 00 00-43 00 61 00 6C 00 65 00
0010: 6E 00 64 00 61 00 72 00-00 00 43 00 61 00 6C 00
0020: 65 00 6E 00 64 00 61 00-72 00 20 00 43 00 6F 00
0030: 6D 00 6D 00 65 00 6E 00-74 00 00 00
```

RopCreateFolder ([\[MS-OXCROPS\]](#) section 2.2.4.2)

RopId: 0x1C

LogonId: 0

InputHandleIndex: 0 (Server object handle = 0x00000497)

FolderType: 0x01

UseUnicodeStrings: (0x01) (TRUE)

OpenExisting: 0x00 (FALSE)

Reserved: 0x00 (FALSE)

DisplayName: **Calendar**

Comment: Calendar Comment

```
0000: 02 00 00 01 01 00 00 00-01 42 0E 44 00
```

RopOpenFolder

RopId: 0x02

LogonId: 0

InputHandleIndex: 0 (Server object handle = 0x00000059)

FolderId: 0001-000001420E44

Note Open the Inbox folder with the FID given in the **FolderId** field.

OpenModeFlags: 0x00 (Open existing folder)

```
0000: 0A 00 00 36 00 01 00 02-01 D0 36 2E 00 00 00 00
```

```
0010: 00 6A 3C B8 FA 3B A9 F0-46 B4 F4 E4 B6 C7 74 45
0020: 09 01 00 02 27 39 56 14-8B EF 4F 98 14 81 7E 2C
0030: 82 BD C2 00 00 01 50 4D-F6 00 00
```

RopSetProperties ([\[MS-OXCROPS\]](#) section 2.2.8.6)

RopId: 0x0A

LogonId: 0

InputHandleIndex: 0 (Server object handle = 0x000004E4)

Note 0x000004E4 is a handle to the Inbox folder.

PropertyValueSize: 0x0036 (54)

PropertyValueCount: 1 (0x01)

0x36D00102 **PidTagIpmAppointmentEntryId** 46 bytes (section [2.2.3](#))

```
0000: 00 00 00 00 6A 3C B8 FA-3B A9 F0 46 B4 F4 E4 B6
0010: C7 74 45 09 01 00 02 27-39 56 14 8B EF 4F 98 14
0020: 81 7E 2C 82 BD C2 00 00-01 50 4D F6 00 00
```

```
0000: 0A 00 00 26 00 01 00 1F-00 13 36 49 00 50 00 46
0010: 00 2E 00 41 00 70 00 70-00 6F 00 69 00 6E 00 74
0020: 00 6D 00 65 00 6E 00 74-00 00 00
```

RopSetProperties

RopId: 0x0A

LogonId: 0

InputHandleIndex: 0 (Server object handle = 0x0000042E)

PropertyValueSize: 0x0026 (38)

PropertyValueCount: 1 (0x01)

PidTagContainerClass (section [2.2.7](#)): IPF.Appointment

4.2.2 Server Response for Creating a Special Folder

```
0000: 02 01 00 00 00 00 00 00
```

RopOpenFolder ([\[MS-OXCROPS\]](#) section 2.2.4.1)

RopId: 0x02

OutputHandleIndex: 1 (Server object handle = 0x00000497)

Note 0x00000497 is the handle of the Top of Personal Folders folder, and it is used in the **RopCreateFolder** ROP request ([\[MS-OXCROPS\]](#) section 2.2.4.2) to create the Calendar folder as shown in section [4.2.1](#).

ReturnValue: Success (0x00000000)

HasRules: 0x00 (FALSE)

IsGhosted: 0x00 (FALSE)

0000: 1C 01 00 00 00 00 01 00-00 00 01 50 4D F6 00

RopCreateFolder ([\[MS-OXCROPS\]](#) section 2.2.4.2)

RopId: 0x1C

OutputHandleIndex: 1 (Server object handle = 0x0000042E)

Note 0x0000042E is the handle to the Calendar folder that was created.

ReturnValue: ecNone (success) (0x00000000)

FolderId: 0001-000001504df6

IsExistingFolder: 0x00 (FALSE)

0000: 02 01 00 00 00 00 00 00

RopOpenFolder

RopId: 0x02

OutputHandleIndex: 1 (Server object handle = 0x000004E4)

Note 0x000004E4 is the handle of the Inbox folder. It is used in the **RopSetProperties** ROP request ([\[MS-OXCROPS\]](#) section 2.2.8.6) to set the **PidTagIpmAppointmentEntryId** property (section [2.2.3](#)) of the Inbox folder as shown in section [4.2.1](#).

ReturnValue: Success (0x00000000)

HasRules: 0x00 (FALSE)

IsGhosted: 0x00 (FALSE)

0000: 0A 00 00 00 00 00 00 00

RopSetProperties

RopId: 0x0A

InputHandleIndex: 0 (Server object handle = 0x0000042E)

ReturnValue: ecNone (success) (0x00000000)

PropertyProblemCount: 0

PropertyProblems:

0000: 0A 00 00 00 00 00 00 00

RopSetProperties

RopId: 0x0A

InputHandleIndex: 0 (Server object handle = 0x0000042E)

ReturnValue: ecNone (success) (0x00000000)

PropertyProblemCount: 0

PropertyProblems:

5 Security

5.1 Security Considerations for Implementers

There are no special security considerations specific to the Special Folders Protocol. General security considerations pertaining to the underlying transport apply, as described in [\[MS-OXCFLD\]](#).

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 2.2.5.1:](#) Office Outlook 2003 clients and Exchange 2003 servers do not recognize the RSS Feeds, Tracked Mail Processing, and To-Do folders as special folders.

[<2> Section 3.1.4.1.1:](#) Office Outlook 2003 sets the search criteria to include only the Calendar, Tasks, Inbox, and Contacts folders, and it sets a restriction (2) only for the **PidLidReminderSet** ([\[MS-OXPROPS\]](#) section 2.216) and **PidLidRecurring** ([\[MS-OXPROPS\]](#) section 2.209) properties. In addition, it does not include RECURSIVE_SEARCH.

[<3> Section 3.1.4.1.2:](#) Office Outlook 2003 and Exchange 2003 do not recognize search criteria for the To-Do folder.

[<4> Section 3.1.4.1.3:](#) Office Outlook 2003 and Exchange 2003 do not recognize search criteria for the Tracked Mail Processing folder.

7 Change Tracking

This section identifies changes that were made to the [MS-OXOSFLD] protocol document between the March 2011 and August 2011 releases. Changes are classified as New, Major, Minor, Editorial, or No change.

The revision class **New** means that a new document is being released.

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

- A document revision that incorporates changes to interoperability requirements or functionality.
- An extensive rewrite, addition, or deletion of major portions of content.
- The removal of a document from the documentation set.
- Changes made for template compliance.

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

The revision class **Editorial** means that the language and formatting in the technical content was changed. Editorial changes apply to grammatical, formatting, and style issues.

The revision class **No change** means that no new technical or language changes were introduced. The technical content of the document is identical to the last released version, but minor editorial and formatting changes, as well as updates to the header and footer information, and to the revision summary, may have been made.

Major and minor changes can be described further using the following change types:

- New content added.
- Content updated.
- Content removed.
- New product behavior note added.
- Product behavior note updated.
- Product behavior note removed.
- New protocol syntax added.
- Protocol syntax updated.
- Protocol syntax removed.
- New content added due to protocol revision.
- Content updated due to protocol revision.
- Content removed due to protocol revision.
- New protocol syntax added due to protocol revision.

- Protocol syntax updated due to protocol revision.
- Protocol syntax removed due to protocol revision.
- New content added for template compliance.
- Content updated for template compliance.
- Content removed for template compliance.
- Obsolete document removed.

Editorial changes are always classified with the change type **Editorially updated**.

Some important terms used in the change type descriptions are defined as follows:

- **Protocol syntax** refers to data elements (such as packets, structures, enumerations, and methods) as well as interfaces.
- **Protocol revision** refers to changes made to a protocol that affect the bits that are sent over the wire.

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

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
1 Introduction	Added information about which sections of the specification are normative and can contain RFC 2119 language.	N	Content updated for template compliance.
1.3 Overview	Moved the table of folders to the "List of Special Folders" section.	Y	Content removed.
2.2 Message Syntax	Moved content to the new section "Identifiers for Special Folders".	N	Content removed.
2.2.1 List of Special Folders	Added section to contain content moved from the "Overview" section.	Y	New content added.
2.2.2 Identifiers for Special Folders	Added new section. Moved content from the "Message Syntax" section. Revised to describe identifiers instead of identification methods.	N	New content added.
2.2.3 Binary Identification Properties	Revised the table to describe each property.	N	Content updated.
2.2.5.1 PersistData Structure	Deleted the product behavior note about Outlook 2003, Outlook 2007, Exchange 2003, and Exchange 2007 not recognizing the Conversation Settings folder as a special folder.	N	Product behavior note removed.
2.2.5.1 PersistData Structure	Deleted the product behavior note about Outlook 2003, Outlook 2007, Exchange	N	Product behavior note removed.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
	2003, and Exchange 2007 not recognizing the Suggested Contacts folder as a special folder.		
2.2.7 PidTagContainerClass Property	Deleted table and added reference to the "List of Special Folders" section.	N	Content updated.
3.1.1.2 Search Criteria for Search Special Folders	Removed the reference to [MS-OXOSRCH] for details about search folders.	N	Content updated.
3.1.4 Higher-Layer Triggered Events	Specified that the implementation uses an identifier with the Folder Object Protocol to open a special folder. Clarified conditions under which the implementation creates the special folder.	N	Content updated.
3.1.4.1 Folder Creation	Clarified (in step 2) how the FID is converted to an entry ID. Specified (in step 3) that the implementation stores the entry ID at the correct location.	N	Content updated.
3.1.4.1.1 Creating the Reminders Folder	Removed the reference to [MS-OXOSRCH] for details about setting the search criteria.	N	Content updated.
3.1.4.1.1 Creating the Reminders Folder	Specified that search criteria is composed of restrictions.	N	Content updated.
3.1.4.1.2 Creating the To-Do Folder	Removed the reference to [MS-OXOSRCH] for details about setting the search criteria.	N	Content updated.
3.1.4.1.2 Creating the To-Do Folder	Specified that search criteria is composed of restrictions.	N	Content updated.
3.1.4.1.3 Creating the Tracked Mail Processing Folder	Removed the reference to [MS-OXOSRCH] for details about setting the search criteria.	N	Content updated.
3.1.4.1.3 Creating the Tracked Mail Processing Folder	Specified that search criteria is composed of restrictions.	N	Content updated.
3.1.4.1.4 Creating Other Special Folders	Specified that the ID is used with the Folder Object Protocol to open the folder.	N	Content updated.
3.1.5 Message Processing Events and Sequencing Rules	Clarified the failure condition related to folder identification.	N	Content updated.
4 Protocol Examples	Clarified the explanation for the format of the byte sequence.	N	Content updated.

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
4.1.1 Client Request for Opening a Special Folder	Changed "HSOT" to "Server object handle" for HandleIndex detail.	N	Content updated.
4.1.2 Server Response for Opening a Special Folder	Changed "HSOT" to "Server object handle" for HandleIndex detail.	N	Content updated.
4.2.1 Client Request for Creating a Special Folder	Changed "HSOT" to "Server object handle" for HandleIndex detail.	N	Content updated.
4.2.2 Server Response for Creating a Special Folder	Changed "HSOT" to "Server object handle" for HandleIndex detail.	N	Content updated.
4.2.2 Server Response for Creating a Special Folder	Clarified the note about how the HandleIndex is used.	N	Content updated.

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