[MS-OXCROPS]: Remote Operations (ROP) List and Encoding Protocol Specification

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1 Introduction

This document specifies the Remote Operations (ROP) List and Encoding protocol, which is used by the client to access and modify mailbox information on the server.

1.1 Glossary

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

distinguished name (DN)
domain
folder
folder associated information (FAI)
folder ID (FID)
global identifier (GID)
identifier
little -endian
mailbox
message
message class
property
property ID
property name
property tag
public folder
Receive folder
remote operation (ROP)
special folder
store

The following terms are specific to this document:

Gateway Address Routing Table (GWART): A list of values specifying the address types supported by transport gateways.

ghosted folder: A folder whose contents are located on another server.

lowest cost server: A server whose communication cost to access is the lowest in a list of servers.

ROP buffer: A buffer containing ROP requests or responses and a Server Object Handle Table.

ROP request: An array of bytes specifying an operation request of a client.

ROP response: An array of bytes specifying an operation response of a server.

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Server object: An object on a server that is used as input or created as output for remote operations.

Server object handle: A 32-bit value that identifies a Server Object.

Server object handle table: An array of 32-bit handles that are used to identify input and output Server Objects for ROP requests and responses.

Server object map: An object that stores the connection between a Server Object Handle and the Server Object that it identifies.

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

[MS-OXCDATA] Microsoft Corporation, "Data Structures Protocol Specification", April 2008.

[MS-OXCFOLD] Microsoft Corporation, "Folder Object Protocol Specification", April 2008.

[MS-OXCFXICS] Microsoft Corporation, "Bulk Data Transfer Protocol Specification", April 2008.

[MS-OXCMSG] Microsoft Corporation, "Message and Attachment Object Protocol Specification", April 2008.

[MS-OXCNOTIF] Microsoft Corporation, "Core Notifications Protocol Specification", April 2008.

[MS-OXCPERM] Microsoft Corporation, "Exchange Access and Operation Permissions Specification", April 2008.

[MS-OXCPRPT] Microsoft Corporation, "Property and Stream Object Protocol Specification", April 2008.

[MS-OXCRPC] Microsoft Corporation, "Wire Format Protocol Specification", April 2008.

[MS-OXCSTOR] Microsoft Corporation, "Store Object Protocol Specification", April 2008.

[MS-OXCTABL] Microsoft Corporation, "Table Object Protocol Specification", April 2008.

[MS-OXGLOS] Microsoft Corporation, "Office Exchange Protocols Master Glossary", April 2008.

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[MS-OXOMSG] Microsoft Corporation, "E-mail Object Protocol Specification", April 2008.

[MS-OXORULE] Microsoft Corporation, "E-mail Rules Protocol Specification", April 2008.

[MS-OXPROPS] Microsoft Corporation, "Office Exchange Protocols Master Property List Specification", April 2008.

[MS-XWDVSEC] Microsoft Corporation, "Web Distributed Authoring and Versioning (WebDAV) Protocol: Security Descriptor Extensions Specification", April 2008.

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

1.2.2 Informative References

None.

1.3 Protocol Overview

The Remote Operations (ROP) List and Encoding protocol specifies the details of each remote operation (ROP).

ROP buffers are used by the client to send operation requests to the server and by the server to send responses back to the client. These requests specify operations that access and modify mailbox data on a server, such as the following:

- Log on to mailboxes or public folders on a server
- Retrieve the list of folders and messages on a mailbox
- Move and copy messages or folders from one location to another
- Sort and filter views of messages or folders
- Submit new messages for delivery to other mailboxes or servers
- Retrieve a list of changes made to messages and folders
- Register for notifications when contents of a mailbox have changed

In a typical scenario, a client packages one or more **ROP requests** into a ROP buffer and makes a function call on the **EMSMDB** interface, as specified in [MS-OXCRPC], passing the buffer. The server then parses the ROP requests from the buffer. Each request is executed and a **ROP response** is added to the output ROP buffer. Once the server is done processing the input ROP buffer, the function call returns the responses to the client.

1.3.1 Server Objects

A **Server Object** refers to an object created during execution of specific ROPs. Once created, a Server Object can then be used as a parameter for other ROPs until it is released. A Server Object is typically a view of data on the server, such as a **folder** or a message object, but it could also be an object used to control synchronization or change notifications.

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A Server Object is identified in a ROP buffer by a **Server Object Handle**, a 32-bit handle value. This handle is assigned by the server when the Server Object is created. A client uses a Server Object Handle to specify a Server Object to be used as input for a ROP request.

1.3.2 Format of ROP Buffers

A ROP buffer contains a list of ROP requests or responses followed by a **Server Object Handle Table**. Each request contains input values to use for an operation. Each response contains output produced during the execution of previous requests. The Server Object Handle Table contains Server Object Handles that are used as input or output for ROPs.

With few exceptions, a ROP request or response does not directly specify Server Object Handles, but instead contains an index into the Server Object Handle Table. When the index is used for an input parameter, it specifies the location of the Server Object Handle identifying the input Server Object. When the index is used for an output parameter, it specifies the entry in the Server Object Handle Table where the handle for the created Server Object will be stored if the operation is successful. If the operation is unsuccessful, the content of the entry in the Server Object Handle Table is undefined.

The usage of an index allows a client to create a ROP buffer consisting of ROP requests that reference as an input parameter a Server Object created earlier during processing of the buffer. In this way, fewer round-trip calls between the client and server are necessary.

1.4 Relationship to Other Protocols

The Remote Operations (ROP) List and Encoding protocol is dependent upon the Wire Format protocol, as specified in [MS-OXCRPC]. The ROP buffers are sent and received as parameters of the **EcDoRpcExt2** function on the **EMSMDB** interface. In addition, information provided during the **EcDoConnectEx** calls on the same interface is used later when executing ROP requests.

There are a number of protocols that are built on the Remote Operations (ROP) List and Encoding protocol. Some examples include the Bulk Data Transfer protocol, specified in [MS-OXCFXICS], and the Property and Stream Object protocol, specified in [MS-OXCPRPT].

There are several protocols which can be considered alternatives to the Remote Operations (ROP) List and Encoding protocol. These alternatives include IMAP4 and Distributed Authoring and Versioning (DAV). For details about IMAP4, see [MS-OXIMAP4]. For details about DAV, see [MS-XWDVSEC].

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1.5 Prerequisites/Preconditions

The Remote Operations (ROP) List and Encoding protocol assumes that a connection was already made using the **EMSMDB** interface, as specified in [MS-OXCRPC]. The connection process authenticates and exchanges version information between the server and client.

Successful communication between the client and server requires that the client is already configured with information about the mailbox and server. Several ROPs make use of a distinguished name (DN) as an input field to specify a mailbox or a server.

1.6 Applicability Statement

This protocol is used to view and modify mailbox and public folder data. It provides broad low-level access to the contents that are on the server.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

Unless otherwise specified, buffers and fields in this section are depicted in little-endian byte order.

2.1 Transport

The ROP request and response buffers specified in the following sections are sent and received by using the **EcDoRpcExt2** RPC functions, as specified in [MS-OXCRPC].

2.2 Message Syntax

Each ROP request and response buffer consists of the following structure.

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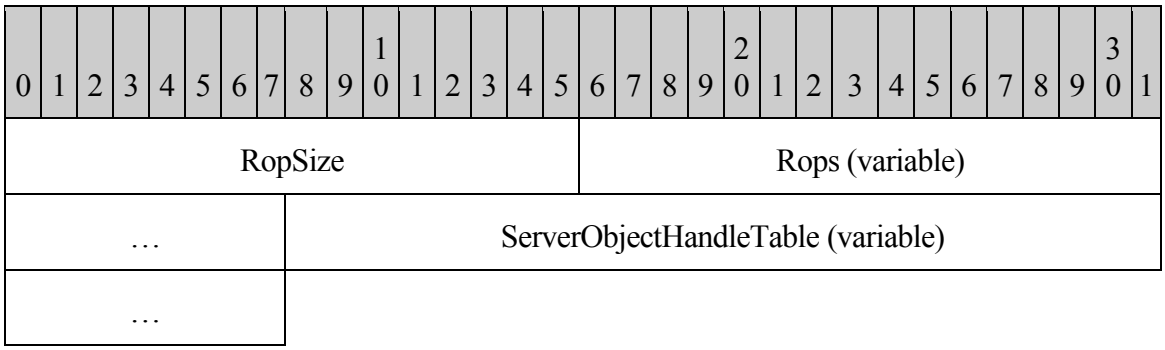

RopSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of this field and the **Rops** field.

Rops (variable): List of ROP buffers. The number of bytes in this field MUST be 2 bytes less than the value specified in the **RopSize** field. The formats of the ROP buffers are specified in subsequent sections.

ServerObjectHandleTable (variable): Array of 32-bit identifiers. The length of this field is the length of the remaining data in the buffer after the **Rops** field. These identifiers specify the Server Object Handles that are referenced in the **Rops** field.

2.2.1 The Table of RopIds

Each ROP is identified by a one-byte value, which is contained in the **RopId** field of ROP request and response buffers. The ROPs that a client is allowed to use are included in the following table. A ROP that is specified as "Reserved" is not used in the communication between the client and server. Therefore, the client MUST NOT use the reserved ROPs. . . The server SHOULD <1> return an error for the RPC call when it encounters a **RopId** value that is associated with a reserved ROP.

RopId	ROP name	Section
0x00	Reserved	
0x01	**RopRelease**	2.2.14.3
0x02	**RopOpenFolder**	2.2.3.1
0x03	**RopOpenMessage**	2.2.5.1
0x04	**RopGetHierarchyTable**	2.2.3.15
0x05	**RopGetContentsTable**	2.2.3.16
0x06	**RopCreateMessage**	2.2.5.2
0x07	**RopGetPropertiesSpecific**	2.2.7.3
0x08	**RopGetPropertiesAll**	2.2.7.4
0x09	**RopGetPropertiesList**	2.2.7.5
0x0A	**RopSetProperties**	2.2.7.6
0x0B	**RopDeleteProperties**	2.2.7.8
0x0C	**RopSaveChangesMessage**	2.2.5.3

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0x0D	**RopRemoveAllRecipients**	2.2.5.4
0x0E	**RopModifyRecipients**	2.2.5.5
0x0F	**RopReadRecipients**	2.2.5.6
0x10	**RopReloadCachedInformation**	2.2.5.7
0x11	**RopSetMessageReadFlag**	2.2.5.11
0x12	**RopSetColumns**	2.2.4.1
0x13	**RopSortTable**	2.2.4.2
0x14	**RopRestrict**	2.2.4.3
0x15	**RopQueryRows**	2.2.4.4
0x16	**RopGetStatus**	2.2.4.6
0x17	**RopQueryPosition**	2.2.4.7
0x18	**RopSeekRow**	2.2.4.8
0x19	**RopSeekRowBookmark**	2.2.4.9
0x1A	**RopSeekRowFractional**	2.2.4.10
0x1B	**RopCreateBookmark**	2.2.4.11
0x1C	**RopCreateFolder**	2.2.3.3
0x1D	**RopDeleteFolder**	2.2.3.4
0x1E	**RopDeleteMessages**	2.2.3.13
0x1F	**RopGetMessageStatus**	2.2.5.9
0x20	**RopSetMessageStatus**	2.2.5.8
0x21	**RopGetAttachmentTable**	2.2.5.17
0x22	**RopOpenAttachment**	2.2.5.12
0x23	**RopCreateAttachment**	2.2.5.13
0x24	**RopDeleteAttachment**	2.2.5.14
0x25	**RopSaveChangesAttachment**	2.2.5.15
0x26	**RopSetReceiveFolder**	2.2.2.3
0x27	**RopGetReceiveFolder**	2.2.2.2
0x28	Reserved	
0x29	**RopRegisterNotification**	2.2.13.1
0x2A	**RopNotify**	2.2.13.5
0x2B	**RopOpenStream**	2.2.8.1
0x2C	**RopReadStream**	2.2.8.2
0x2D	**RopWriteStream**	2.2.8.3
0x2E	**RopSeekStream**	2.2.8.7
0x2F	**RopSetStreamSize**	2.2.8.6
0x30	**RopSetSearchCriteria**	2.2.3.6
0x31	**RopGetSearchCriteria**	2.2.3.7
0x32	**RopSubmitMessage**	2.2.6.1
0x33	**RopMoveCopyMessages**	2.2.3.8
0x34	**RopAbortSubmit**	2.2.6.2
0x35	**RopMoveFolder**	2.2.3.9
0x36	**RopCopyFolder**	2.2.3.10
0x37	**RopQueryColumnsAll**	2.2.4.12

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0x38	**RopAbort**	2.2.4.5
0x39	**RopCopyTo**	2.2.7.12
0x3A	**RopCopyToStream**	2.2.8.8
0x3B	Reserved	
0x3C	Reserved	
0x3D	Reserved	
0x3E	**RopGetPermissionsTable**	2.2.9.2
0x3F	**RopGetRulesTable**	2.2.10.2
0x40	**RopModifyPermissions**	2.2.9.1
0x41	**RopModifyRules**	2.2.10.1
0x42	**RopGetOwningServers**	2.2.2.6
0x43	**RopLongTermIdFromId**	2.2.2.8
0x44	**RopIdFromLongTermId**	2.2.2.9
0x45	**RopPublicFolderIsGhosted**	2.2.2.7
0x46	**RopOpenEmbeddedMessage**	2.2.5.16
0x47	**RopSetSpooler**	2.2.6.4
0x48	**RopSpoolerLockMessage**	2.2.6.5
0x49	**RopGetAddressTypes**	2.2.6.3
0x4A	**RopTransportSend**	2.2.6.6
0x4B	**RopFastTransferSourceCopyMessages**	2.2.11.5
0x4C	**RopFastTransferSourceCopyFolder**	2.2.11.4
0x4D	**RopFastTransferSourceCopyTo**	2.2.11.6
0x4E	**RopFastTransferSourceGetBuffer**	2.2.11.3
0x4F	**RopFindRow**	2.2.4.13
0x50	**RopProgress**	2.2.7.13
0x51	**RopTransportNewMail**	2.2.6.7
0x52	Reserved	
0x53	**RopFastTransferDestinationConfigure**	2.2.11.1
0x54	**RopFastTransferDestinationPutBuffer**	2.2.11.2
0x55	**RopGetNamesFromPropertyIds**	2.2.7.2
0x56	**RopGetPropertyIdsFromNames**	2.2.7.1
0x57	**RopUpdateDeferredActionMessages**	2.2.10.3
0x58	**RopEmptyFolder**	2.2.3.11
0x59	**RopExpandRow**	2.2.4.16
0x5A	**RopCollapseRow**	2.2.4.17
0x5B	Reserved	
0x5C	Reserved	
0x5D	**RopCommitStream**	2.2.8.4
0x5E	**RopGetStreamSize**	2.2.8.5
0x5F	**RopQueryNamedProperties**	2.2.7.10
0x60	**RopGetPerUserLongTermIds**	2.2.2.10
0x61	**RopGetPerUserGuid**	2.2.2.11
0x62	Reserved	

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0x63	**RopReadPerUserInformation**	2.2.2.12
0x64	**RopWritePerUserInformation**	2.2.2.13
0x65	Reserved	
0x66	**RopSetReadFlags**	2.2.5.10
0x67	**RopCopyProperties**	2.2.7.11
0x68	**RopGetReceiveFolderTable**	2.2.2.4
0x69	**RopFastTransferSourceCopyProperties**	2.2.11.7
0x6A	Reserved	
0x6B	**RopGetCollapseState**	2.2.4.18
0x6C	**RopSetCollapseState**	2.2.4.19
0x6D	**RopGetTransportFolder**	2.2.6.8
0x6E	**RopPending**	2.2.13.6
0x6F	Reserved	
0x70	**RopSynchronizationConfigure**	2.2.12.1
0x71	Reserved	
0x72	**RopSynchronizationImportMessageChange**	2.2.12.2
0x73	**RopSynchronizationImportHierarchyChange**	2.2.12.4
0x74	**RopSynchronizationImportDeletes**	2.2.12.5
0x75	**RopSynchronizationUploadStateStreamBegin**	2.2.12.9
0x76	**RopSynchronizationUploadStateStreamContinue**	2.2.12.10
0x77	**RopSynchronizationUploadStateStreamEnd**	2.2.12.11
0x78	**RopSynchronizationImportMessageMove**	2.2.12.6
0x79	**RopSetPropertiesNoReplicate**	2.2.7.7
0x7A	**RopDeletePropertiesNoReplicate**	2.2.7.9
0x7B	**RopGetStoreState**	2.2.2.5
0x7C	Reserved	
0x7D	Reserved	
0x7E	**RopSynchronizationOpenCollector**	2.2.12.7
0x7F	**RopGetLocalReplicaIds**	2.2.12.13
0x80	**RopSynchronizationImportReadStateChanges**	2.2.12.3
0x81	**RopResetTable**	2.2.4.15
0x82	**RopSynchronizationGetTransferState**	2.2.12.8
0x83	**RopSynchronizationOpenAdvisor**	2.2.13.2
0x84	**RopRegisterSynchronizationNotifications**	2.2.13.3
0x85	Reserved	
0x86	**RopTellVersion**	2.2.11.8
0x87	**RopOpenPublicFolderByName**	2.2.3.2
0x88	**RopSetSynchronizationNotificationGuid**	2.2.13.4
0x89	**RopFreeBookmark**	2.2.4.14
0x8A	**RopDeletePublicFolderByName**	2.2.3.5
0x8B	Reserved	
0x8C	Reserved	
0x8D	Reserved	

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0x8E	Reserved	
0x8F	Reserved	
0x90	Reserved	
0x91	**RopHardDeleteMessages**	2.2.3.14
0x92	**RopHardDeleteMessagesAndSubfolders**	2.2.3.12
0x93	**RopSetLocalReplicaMidsetDeleted**	2.2.12.12
0x94	Reserved	
0x95	Reserved	
0x96	Reserved	
0x97	Reserved	
0x98	Reserved	
0x99	Reserved	
0x9A	Reserved	
0x9B	Reserved	
0x9C	Reserved	
0x9D	Reserved	
0x9E	Reserved	
0x9F	Reserved	
0xA0	Reserved	
0xA1	Reserved	
0xA2	Reserved	
0xA3	Reserved	
0xA4	Reserved	
0xA5	Reserved	
0xA6	Reserved	
0xA7	Reserved	
0xA8	Reserved	
0xA9	Reserved	
0xAA	Reserved	
0xAB	Reserved	
0xAC	Reserved	
0xAD	Reserved	
0xAE	Reserved	
0xAF	Reserved	
0xB0	Reserved	
0xB1	Reserved	
0xB2	Reserved	
0xB3	Reserved	
0xB4	Reserved	
0xB5	Reserved	
0xB6	Reserved	
0xB7	Reserved	
0xB8	Reserved	

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0xB9	Reserved	
0xBA	Reserved	
0xBB	Reserved	
0xBC	Reserved	
0xBD	Reserved	
0xBE	Reserved	
0xBF	Reserved	
0xC0	Reserved	
0xC1	Reserved	
0xC2	Reserved	
0xC3	Reserved	
0xC4	Reserved	
0xC5	Reserved	
0xC6	Reserved	
0xC7	Reserved	
0xC8	Reserved	
0xC9	Reserved	
0xCA	Reserved	
0xCB	Reserved	
0xCC	Reserved	
0xCD	Reserved	
0xCE	Reserved	
0xCF	Reserved	
0xD0	Reserved	
0xD1	Reserved	
0xD2	Reserved	
0xD3	Reserved	
0xD4	Reserved	
0xD5	Reserved	
0xD6	Reserved	
0xD7	Reserved	
0xD8	Reserved	
0xD9	Reserved	
0xDA	Reserved	
0xDB	Reserved	
0xDC	Reserved	
0xDD	Reserved	
0xDE	Reserved	
0xDF	Reserved	
0xE0	Reserved	
0xE1	Reserved	
0xE2	Reserved	
0xE3	Reserved	

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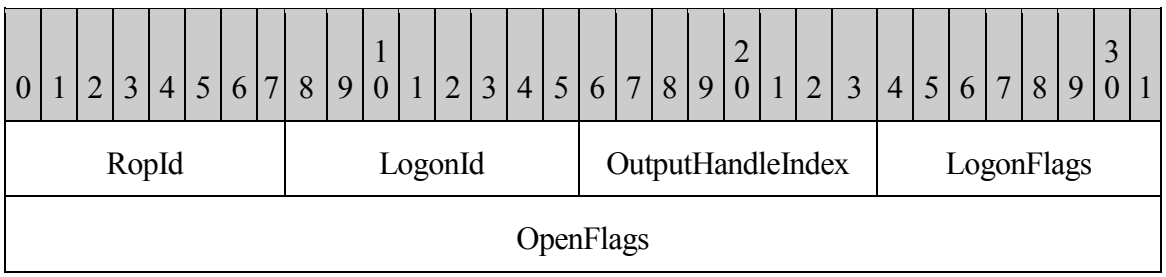
0xE4	Reserved	
0xE5	Reserved	
0xE6	Reserved	
0xE7	Reserved	
0xE8	Reserved	
0xE9	Reserved	
0xEA	Reserved	
0xEB	Reserved	
0xEC	Reserved	
0xED	Reserved	
0xEE	Reserved	
0xEF	Reserved	
0xF0	Reserved	
0xF1	Reserved	
0xF2	Reserved	
0xF3	Reserved	
0xF4	Reserved	
0xF5	Reserved	
0xF6	Reserved	
0xF7	Reserved	
0xF8	Reserved	
0xF9	**RopBackoff**	2.2.14.2
0xFA	Reserved	
0xFB	Reserved	
0xFC	Reserved	
0xFD	Reserved	
0xFE	**RopLogon**	2.2.2.1
0xFF	**RopBufferTooSmall**	2.2.14.1

2.2.2 Logon ROPs

2.2.2.1 RopLogon

This remote operation logs on to a mailbox or public folder. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.1.1 Request Buffer



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StoreState	
EssdnSize	Essdn
…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xFE.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the ID that the client wants associated with the created logon. Any value is allowed and the client does not have to use values in a certain numeric order. If the client specifies an active logon ID, the current logon is released and replaced with the new one.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

LogonFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCSTOR]. This structure contains flags that control the behavior of the logon.

OpenFlags (4 byte): 32-bit flags structure. The possible values are specified in [MS-OXCSTOR]. This structure contains more flags that control the behavior of the logon.

StoreState (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCSTOR]. This structure specifies ongoing action on the mailbox or public folder.

EssdnSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Essdn** field.

Essdn (variable): Null terminated ASCII string. This string MUST contain the same number of characters (including the null) as specified in the **EssdnSize** field. This string specifies which mailbox to log on to.

2.2.2.1.2 Success Response Buffer for Private Mailboxes

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								OutputHandleIndex								ReturnValue															
…																				LogonFlags								FolderIds (104 bytes)			
…																															

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…	
…	ResponseFlags
MailboxGuid (16 bytes)	
…	
…	
…	
ReplId	ReplGuid (16 bytes)
…	
…	
…	
	LogonTime
…	
…	GwartTime
…	
…	StoreState
…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xFE.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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LogonFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCSTOR]. These flags specify the type of logon.

FolderIds (104 bytes): 13 64-bit identifiers. These IDs specify a set of special folders for a mailbox.

ResponseFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCSTOR]. These flags provide details about the state of the mailbox.

MailboxGuid (16 bytes): GUID. This value identifies the mailbox on which the logon was performed.

ReplId (2 bytes): REPLID structure. The format of the **REPLID** structure is specified in [MS-OXCDATA]. This structure specifies a replica ID for the logon.

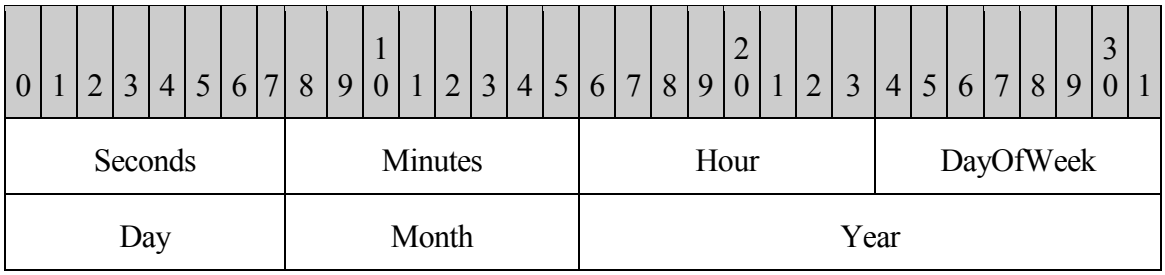
ReplGuid (16 bytes): REPLGUID structure. The format of the **REPLGUID** structure is specified in [MS-OXCDATA]. This structure specifies the replica GUID that is associated with the replica ID, which is specified in the **ReplId** field.

LogonTime (8 bytes): LogonTime structure. The format of this structure is specified in section 2.2.2.1.2.1. This structure specifies the time at which the logon occurred.

GwartTime (8 bytes): Unsigned 64-bit integer. This value represents the number of 100-nanosecond intervals since January 1, 1601. This time specifies when the Gateway Address Routing Table last changed.

StoreState (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCSTOR]. These flags specify ongoing action on the mailbox or public folder.

2.2.2.1.2.1 LogonTime Structure



Seconds (1 byte): Unsigned 8-bit integer. This value specifies the current second.

Minutes (1 byte): Unsigned 8-bit integer. This value specifies the current minute.

Hour (1 byte): Unsigned 8-bit integer. This value specifies the current hour.

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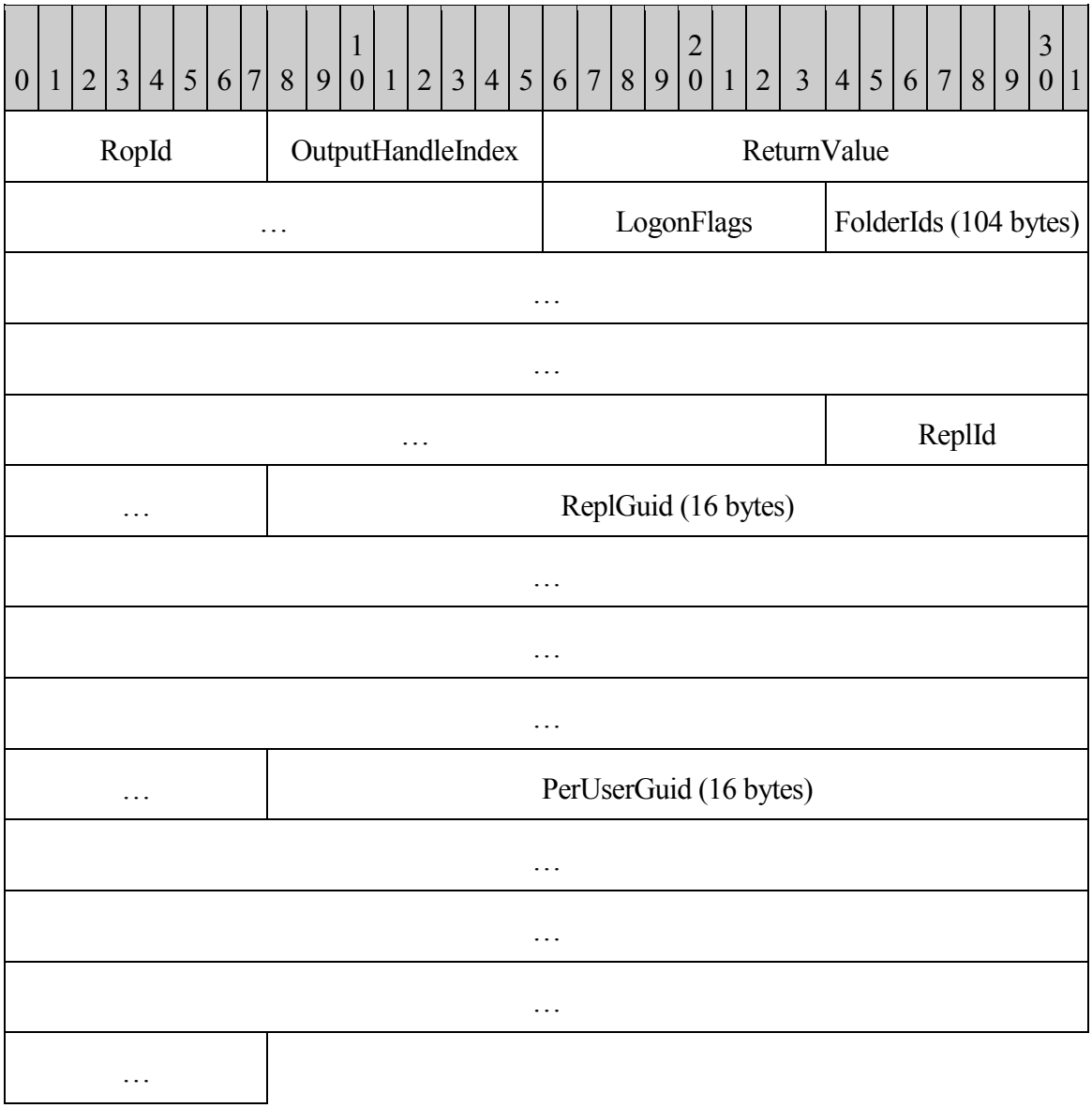
DayOfWeek (1 byte): 8-bit enumeration. This value specifies the current day of the week (Sunday = 0, Monday = 1, and so on).

Day (1 byte): Unsigned 8-bit integer. This value specifies the current day of the month.

Month (1 byte): Unsigned 8-bit integer. This value specifies the current month (January = 1, February = 2, and so on)

Year (2 bytes): Unsigned 16-bit integer. This value specifies the current year.

2.2.2.1.3 Success Response Buffer for Public Folders



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xFE.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

LogonFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCSTOR]. These flags specify the type of logon.

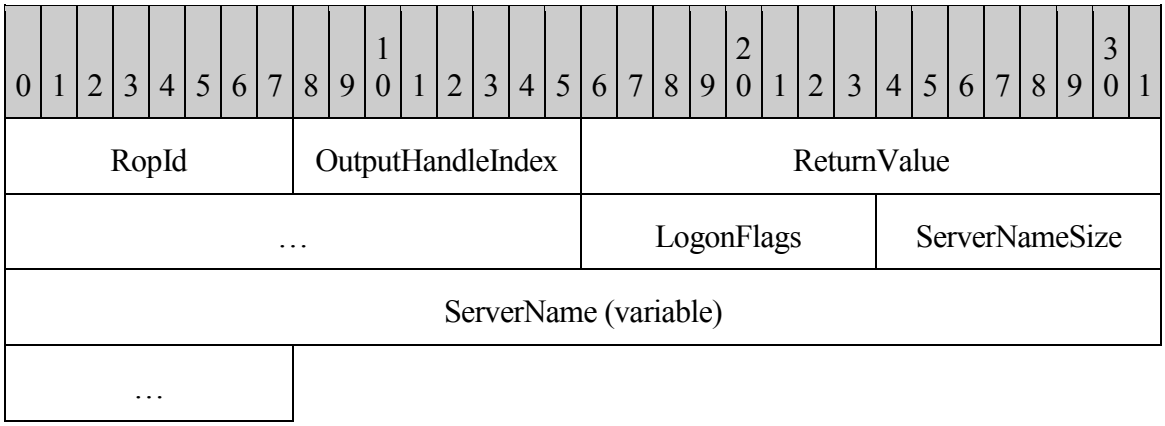
FolderIds (104 bytes): 13 64-bit identifiers. These IDs specify a set of special folders for a mailbox.

ReplId (2 bytes): REPLID structure. The format of the **REPLID** structure is specified in [MS-OXCDATA]. This structure specifies a replica ID for the logon.

Guid (16 bytes): REPLGUID structure. The format of the **REPLGUID** structure is specified in [MS-OXCDATA]. This structure specifies the replica GUID associated with the replica ID that is specified in the **ReplId** field.

PerUserGuid (16 bytes): GUID. This value specifies the GUID that is associated with this user for looking up Per-User information.

2.2.2.1.4 Redirect Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xFE.

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OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

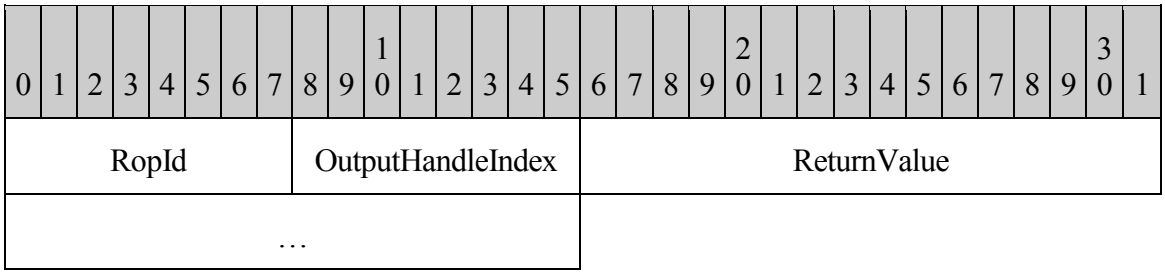
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000478.

LogonFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCSTOR]. These flags specify the type of logon.

ServerNameSize (1 byte): Unsigned 8-bit integer. This value specifies the length of the **ServerName** field.

ServerName (variable): Null terminated ASCII string. This string MUST contain the same number of characters (including the null) as specified in the **ServerNameSize** field. This string specifies a different server for the client to connect to.

2.2.2.1.5 Failure Response



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xFE.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000 or 0x00000478.

2.2.2.2 RopGetReceiveFolder

This remote operation gets the receive folder for incoming messages of a particular message class. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.2.1 Request Buffer

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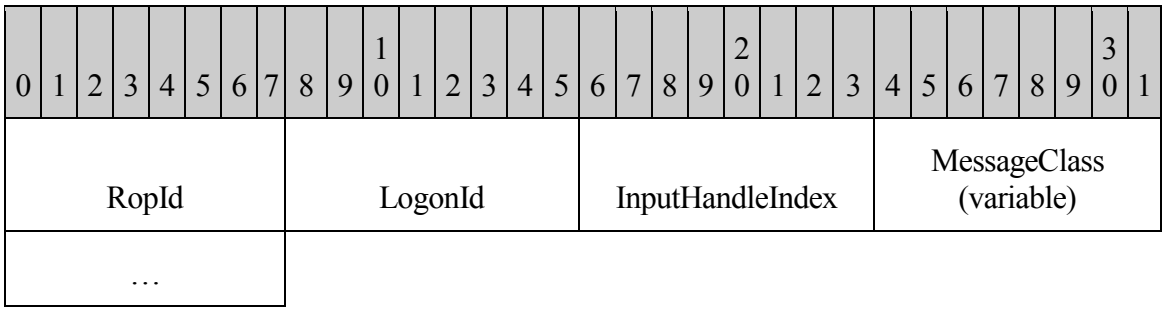


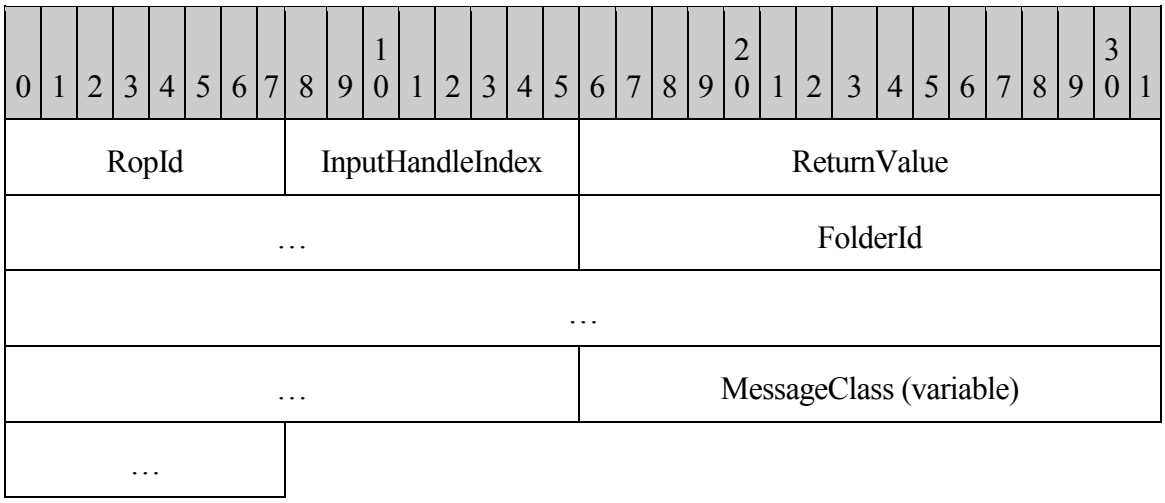
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x27.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

MessageClass (variable): Null-terminated ASCII string. This string specifies which message class to find the receive folder for.

2.2.2.2.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x27.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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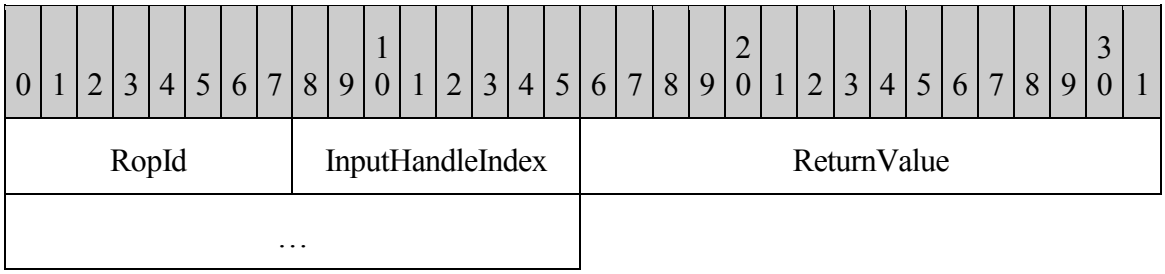
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

FolderId (8 bytes): 64-bit identifier. This value identifies the receive folder.

MessageClass (variable): Null-terminated ASCII string. This string specifies the explicit message class.

2.2.2.2.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x27.

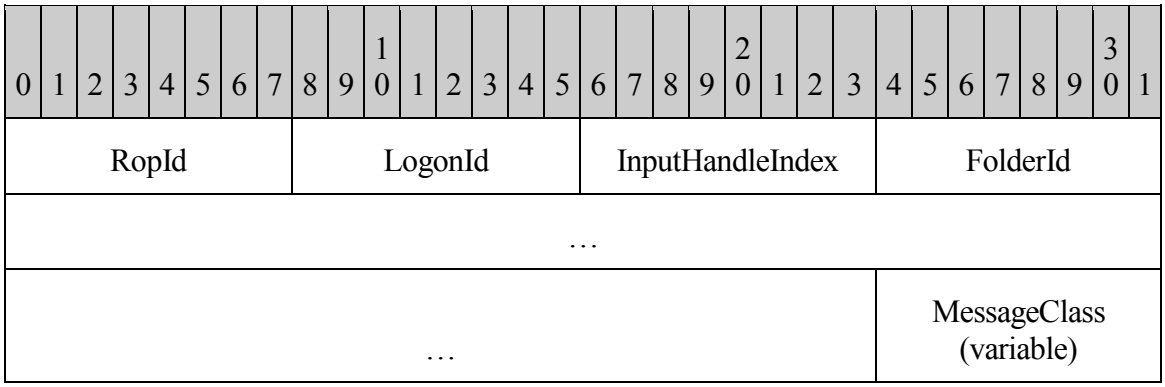
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.3 RopSetReceiveFolder

This remote operation sets the receive folder for incoming messages of a particular message class. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.3.1 Request Buffer



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…

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x26.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

FolderId (8 bytes): 64-bit identifier. This value identifies the receiving folder.

MessageClass (variable): Null-terminated ASCII string. This string specifies which message class to set the receive folder for.

2.2.2.3.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x26.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.2.4 RopGetReceiveFolderTable

This remote operation gets the table of all folders that were established as receive folders. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.4.1 Request Buffer

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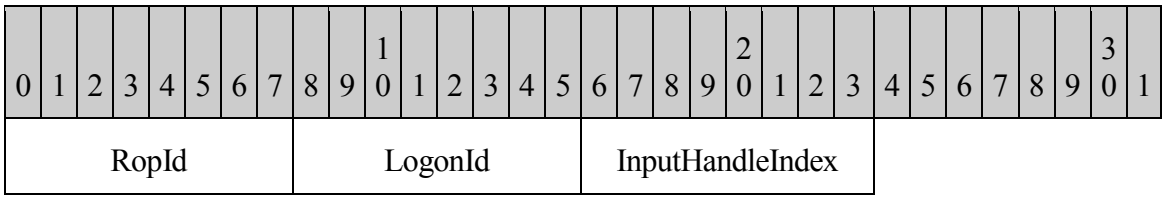
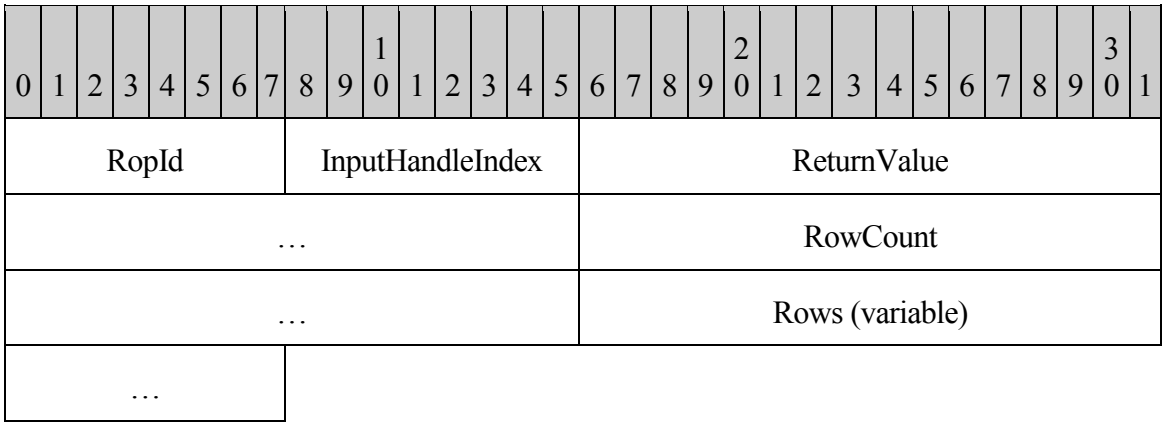


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x68.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.2.4.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x68.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RowCount (4 bytes): 32-bit integer. This specifies the number of RowData structures in the **RowDataArray**.

Rows (variable): List of **PropertyRow** structures. This array MUST contain the same number of structures as defined in **RowCount**. The format of the **PropertyRow** structure is

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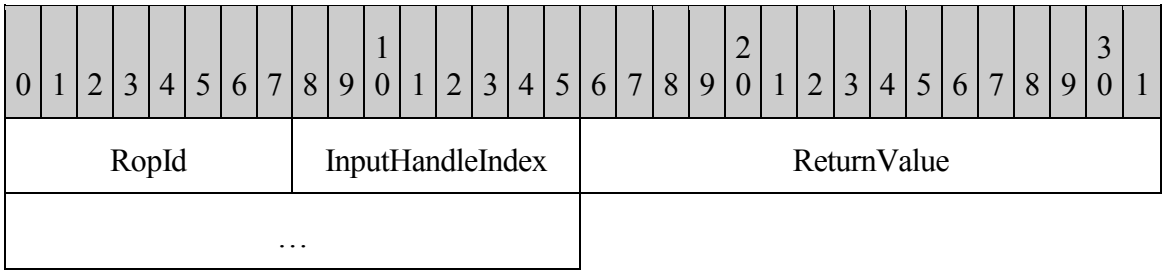
specified in [MS-OXCDATA] and the columns used for these rows are **PidTagFolderId**, **PidTagMessageClass**, and **PidTagLastModificationTime**.

2.2.2.4.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x68.

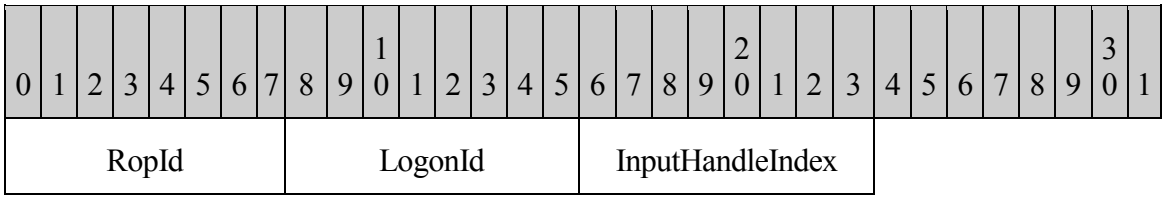
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.5 RopGetStoreState

This remote operation gets the current store state for the logged on user. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.5.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7B.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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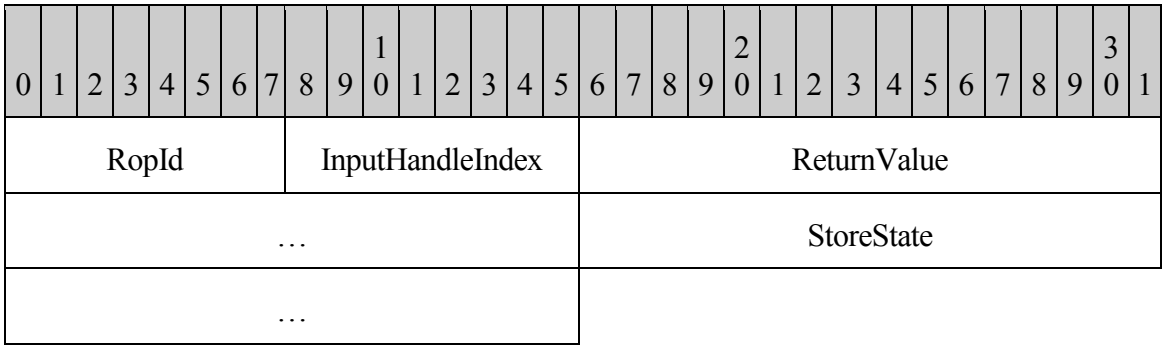
2.2.2.5.2 Success Response Buffer



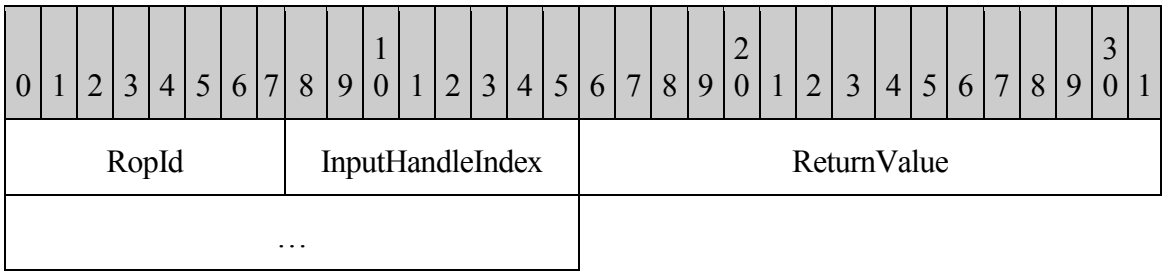
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7B.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

StoreState (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCSTOR]. These flags specify the state related to the logged on user.

2.2.2.5.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7B.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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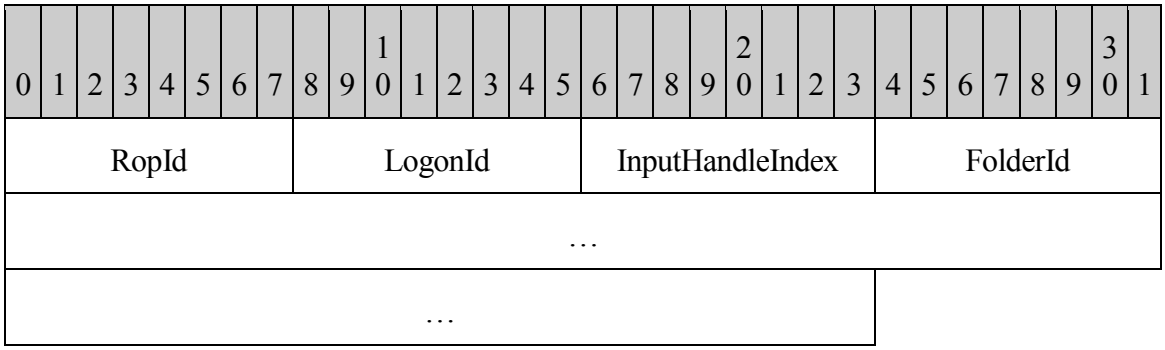
2.2.2.6 RopGetOwningServers

This remote operation gets the list of servers that host replicas of a given public folder. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.6.1 Request Buffer



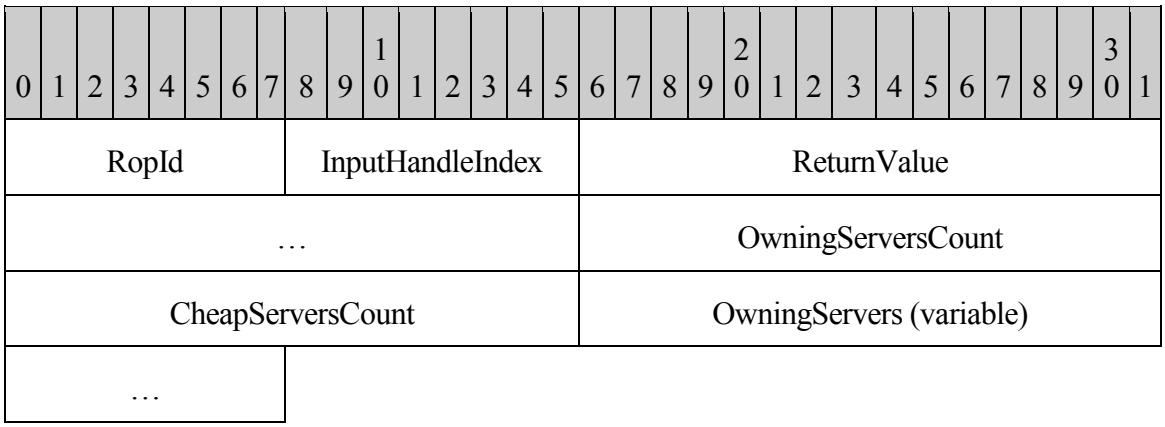
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x42.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

FolderId (8 bytes): 64-bit identifier. This value identifies the folder for which to get owning servers.

2.2.2.6.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x42.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

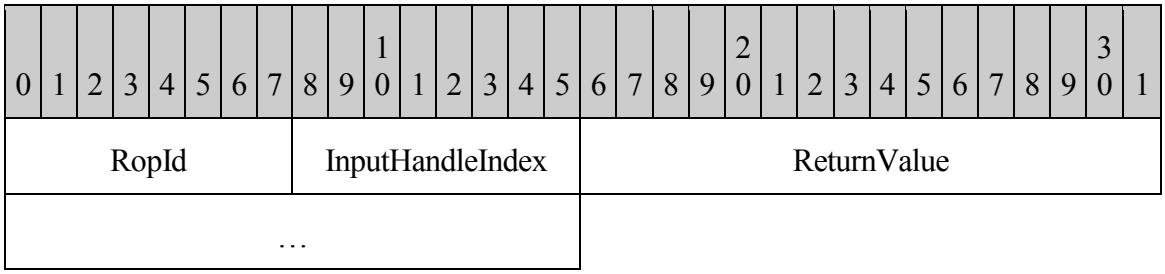
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

OwningServersCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of strings in the **OwningServers** field.

CheapServersCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of values in **OwningServers** that refers to lowest-cost servers.

OwningServers (variable): List of null-terminated ASCII strings. There MUST be **OwningServersCount** number of strings in this list. These strings specify which servers have replicas of this folder.

2.2.2.6.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x42.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.7 RopPublicFolderIsGhosted

This remote operation determines if a public folder is ghosted. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.7.1 Request Buffer

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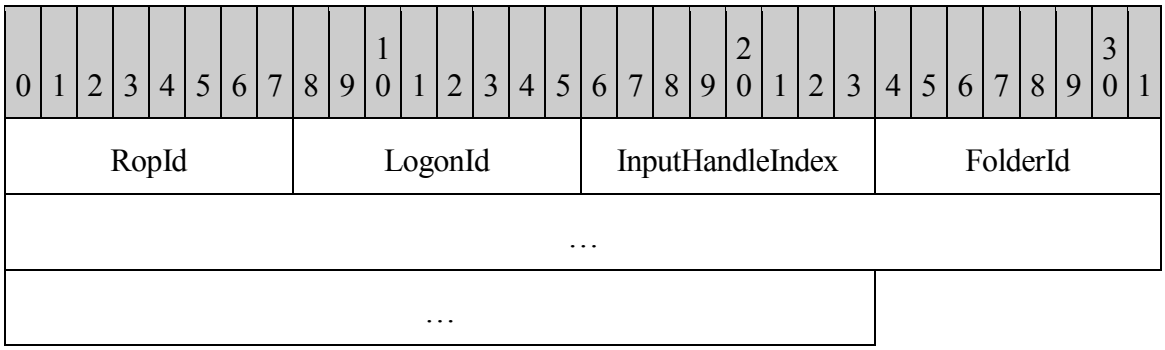


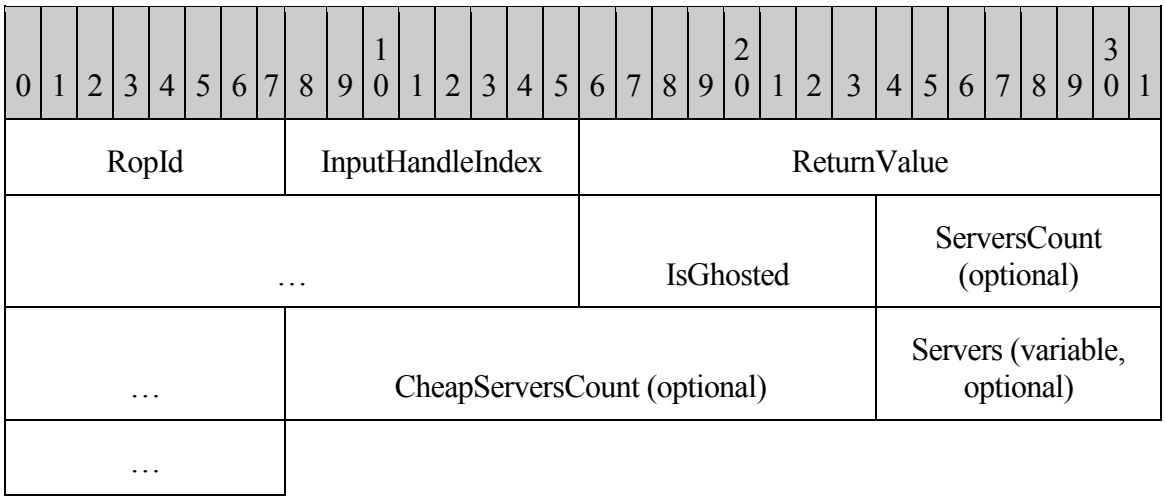
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x45.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

FolderId (8 bytes): 64-bit identifier. This value identifies the folder to check.

2.2.2.7.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x45.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

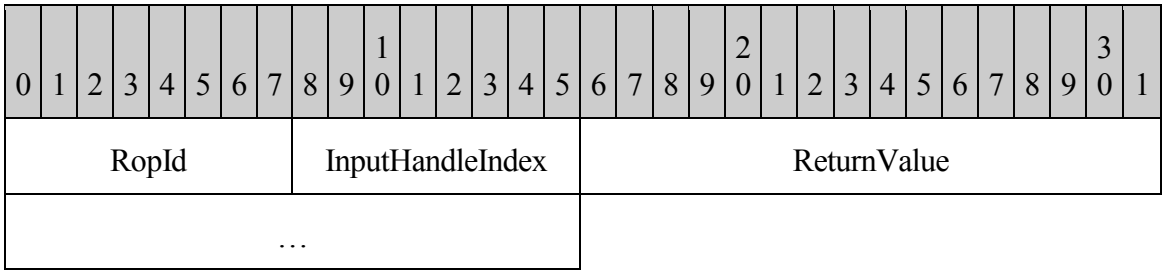
IsGhosted (1 byte): 8-bit Boolean. This value specifies whether the folder is a ghosted folder.

ServersCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. This value specifies the number of strings in the **Servers** field.

CheapServersCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. This value specifies the number of values in **Servers** that refers to lowest cost servers.

Servers (variable, optional): List of null-terminated ASCII strings. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. There MUST be **ServersCount** number of strings in this list. These strings specify which servers have replicas of this folder.

2.2.2.7.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x45.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.8 RopLongTermIdFromId

This remote operation converts a **ShortTermID** into a **LongTermID**. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.8.1 Request Buffer

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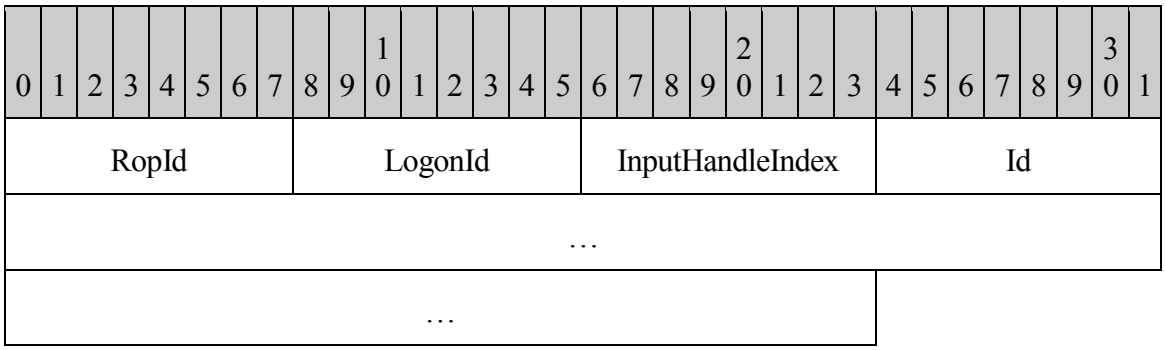


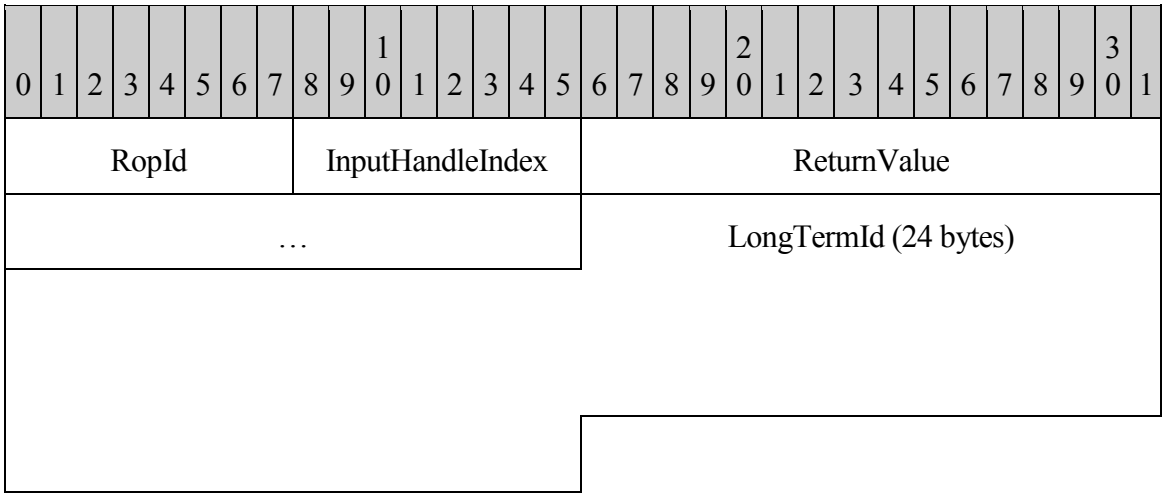
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x43.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Id (8 bytes): 64-bit identifier. This value specifies the short-term ID to be converted to a long-term ID.

2.2.2.8.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x43.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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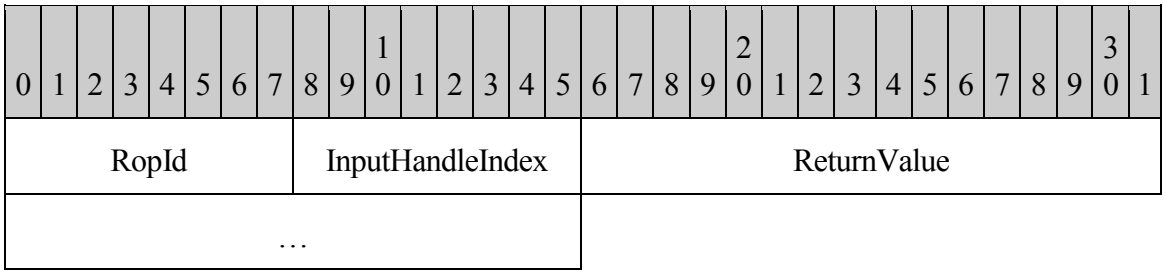
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

LongTermId (24 bytes): LongTermId structure. This structure specifies the long-term ID that was converted from the short-term ID, which is specified in the **Id** field of the request. The format of the **LongTermId** structure is specified in [MS-OXCDATA].

2.2.2.8.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x43.

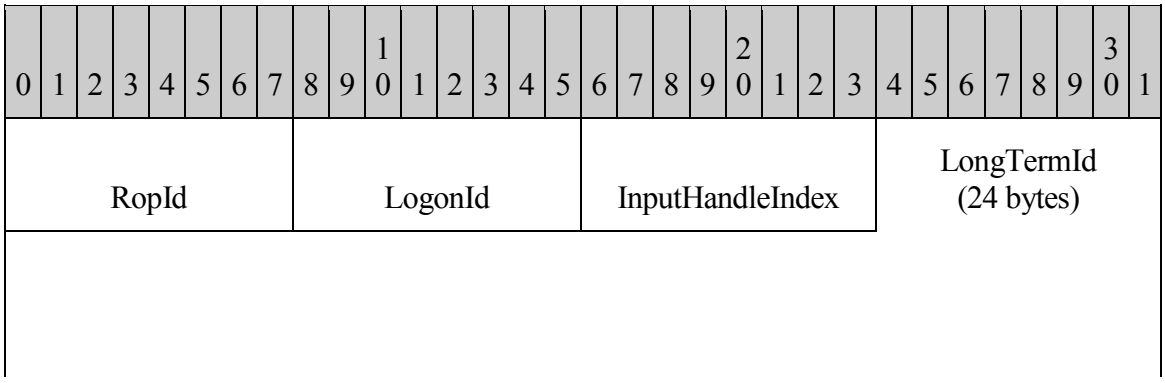
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.9 RopIdFromLongTermId

This remote operation converts a long-term ID into a short-term ID. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.9.1 Request Buffer



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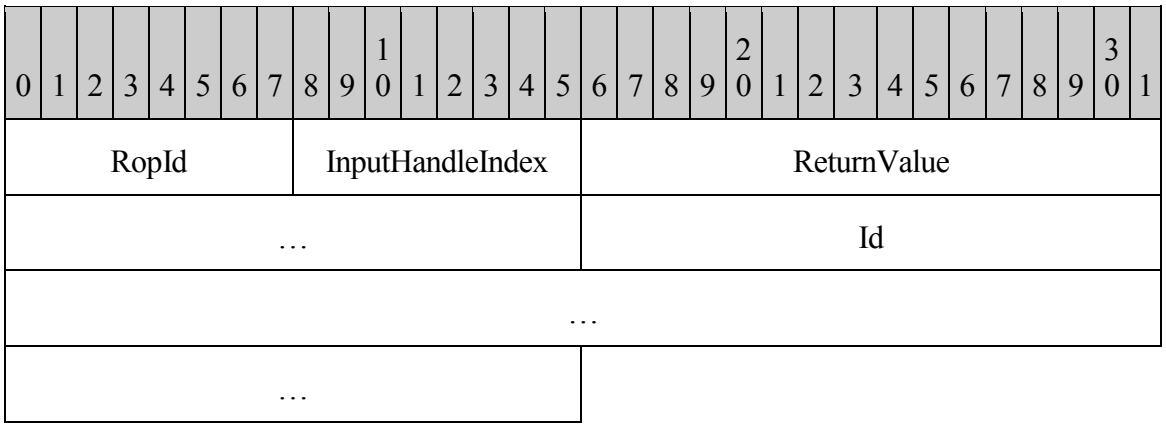
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x44.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

LongTermId (24 bytes): LongTermId structure. The structure specifies the long-term ID to be converted to a short-term ID. The format of the **LongTermId** structure is specified in [MS-OXCDATA].

2.2.2.9.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x44.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

Id (8 bytes): 64-bit identifier. This value specifies the short-term ID that was converted from the long-term ID, which is specified in the **LongTermId** field of the request.

2.2.2.9.3 Failure Response Buffer

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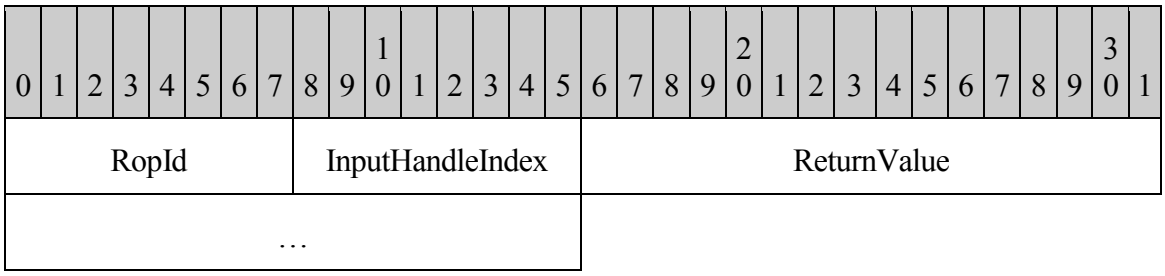


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x44.

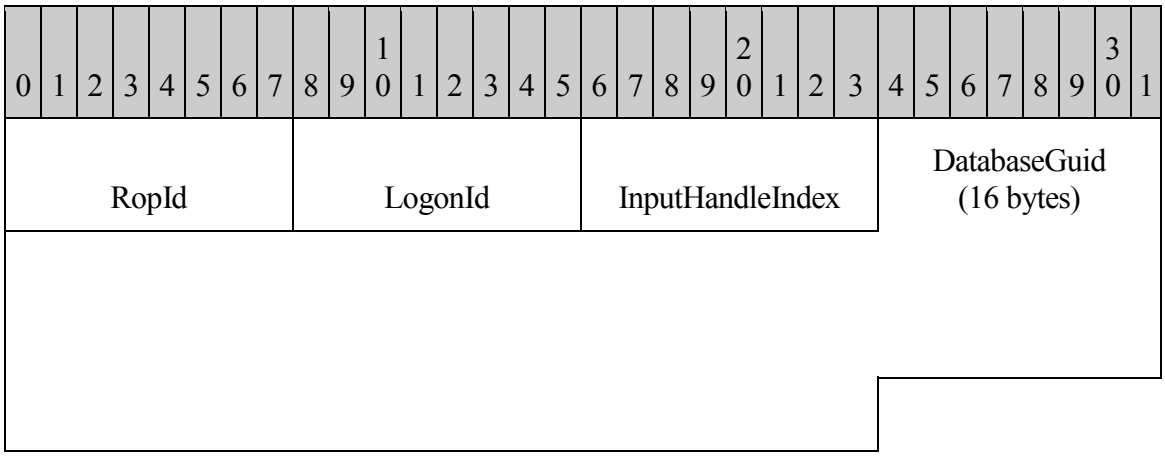
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.10 RopGetPerUserLongTermIds

This remote operation gets the Long Term ID of a public folder that is identified by the per-user GUID of the logged on user. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.10.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x60.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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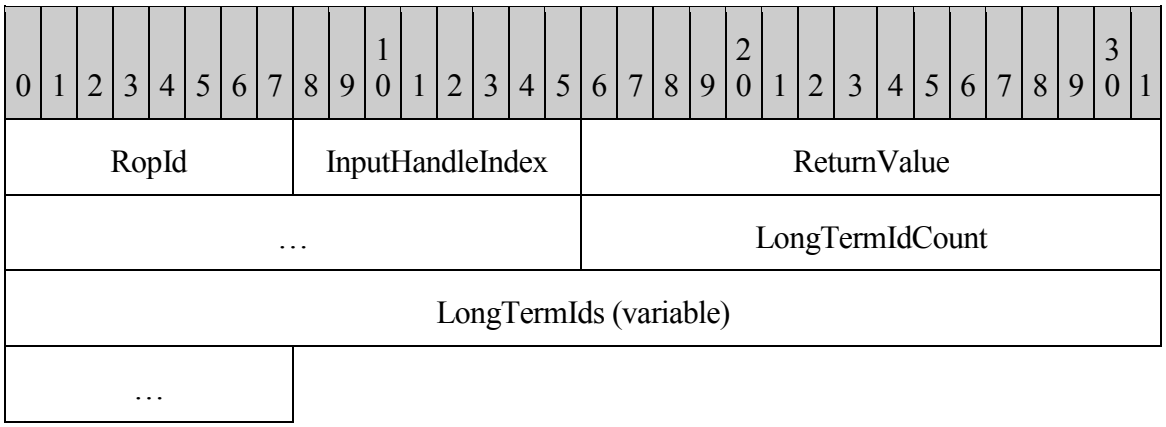
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

DatabaseGuid (16 bytes): GUID. This value specifies which database the client is querying data for.

2.2.2.10.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x60.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

LongTermIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of identifiers in the **LongTermIds** field.

LongTermIds (variable): Array of **LongTermId** structures. The format of the **LongTermId** structures is specified in [MS-OXCDATA]. This field MUST contain the same number of structures as specified in **LongTermIdCount**. These structures specify which folders the user has per-user information about.

2.2.2.10.3 Failure Response Buffer

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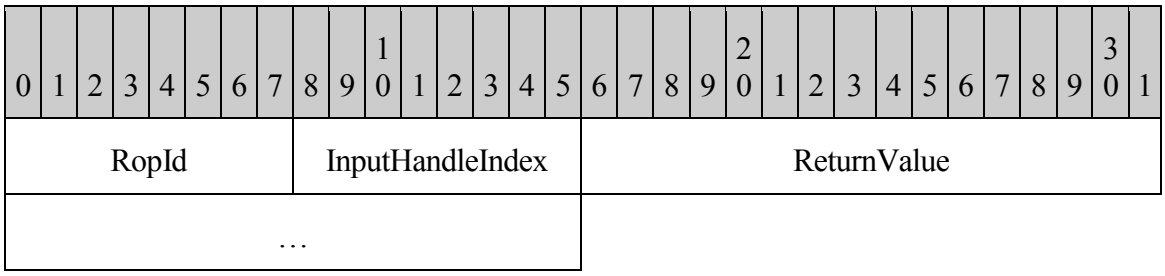


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x60.

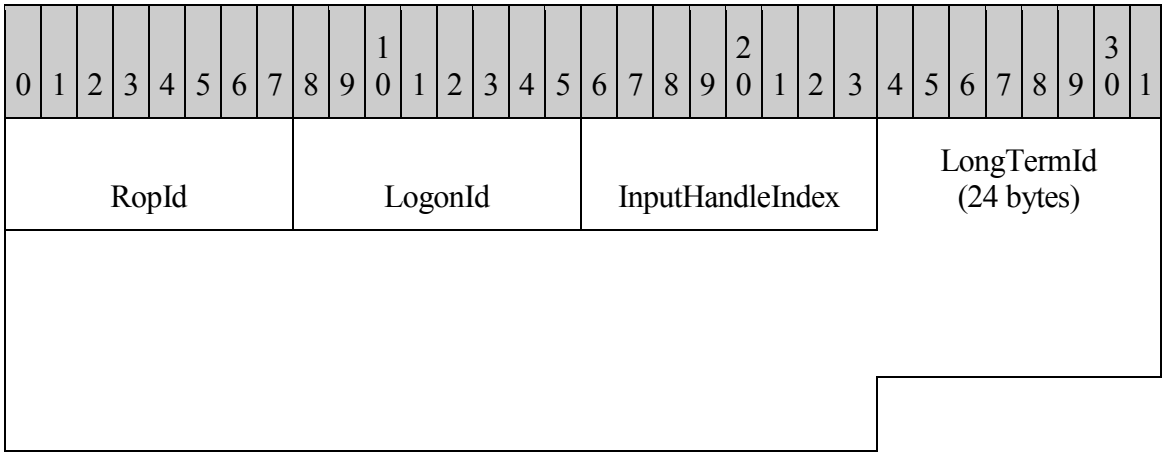
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.11 RopGetPerUserGuid

This remote operation gets the GUID of a public folder's per-user information. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.11.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x61.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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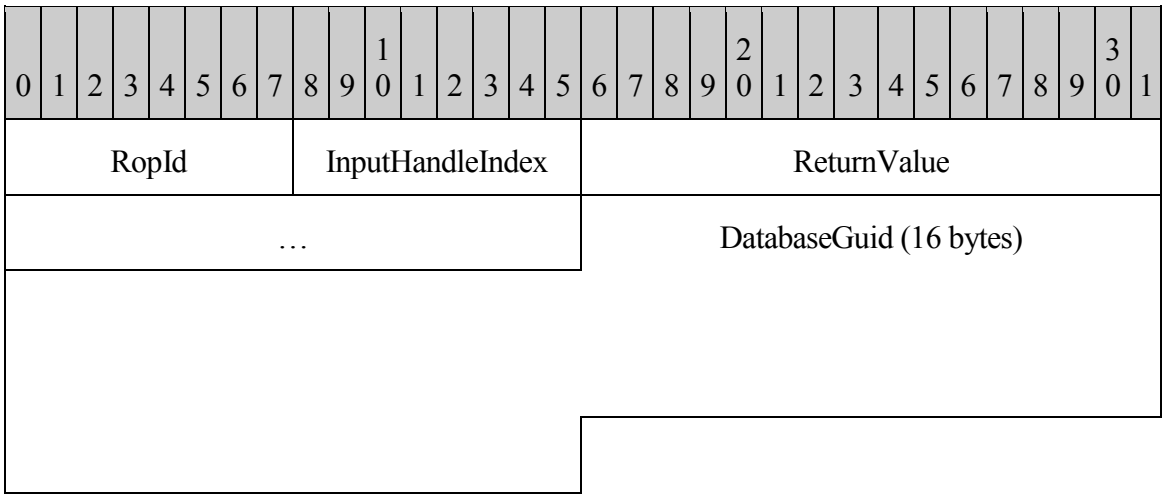
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

LongTermId (24 bytes): LongTermId structure. The format of the **LongTermId** structure is specified in [MS-OXCDATA]. This structure specifies the public folder.

2.2.2.11.2 Success Response Buffer



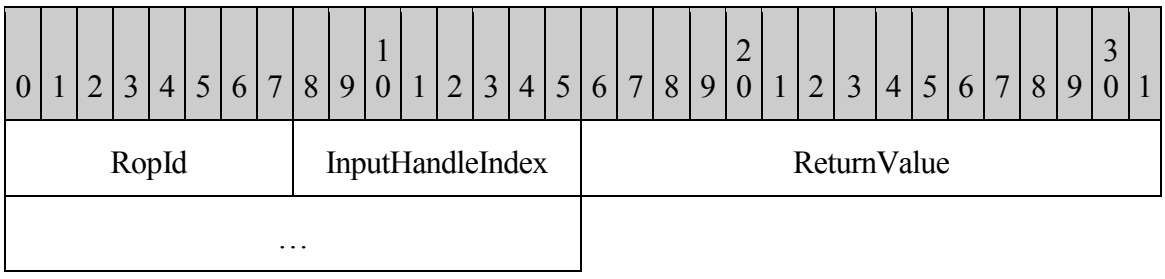
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x61.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

DatabaseGuid (16 bytes): GUID. This value specifies the database for which per-user information was obtained.

2.2.2.11.3 Failure Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x61.

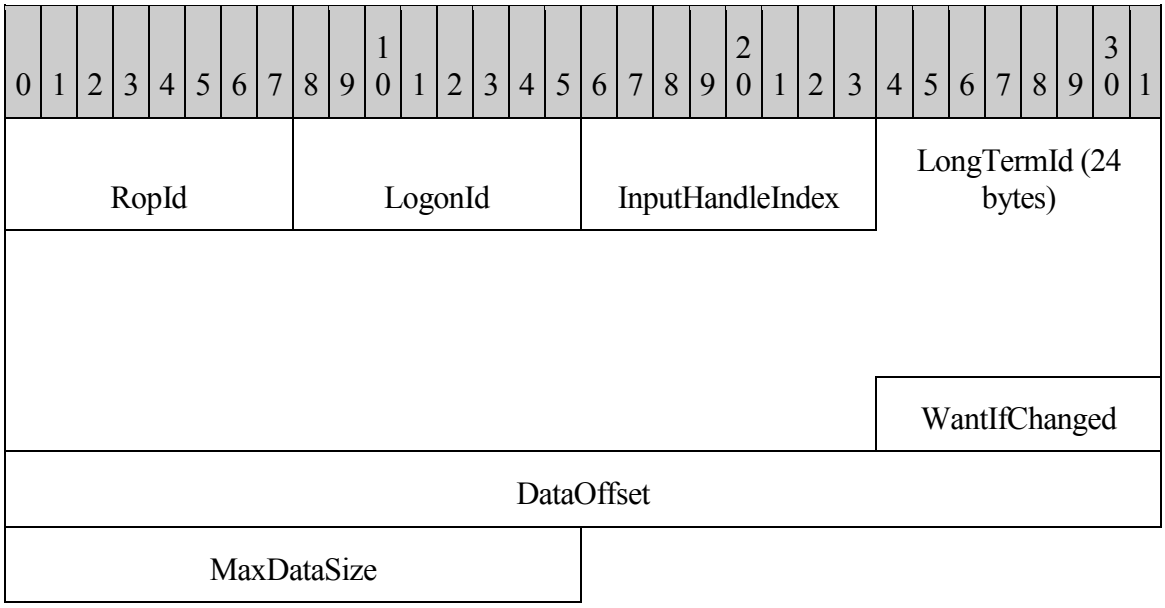
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.12 RopReadPerUserInformation

This remote operation gets per-user information for a public folder. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.12.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x63.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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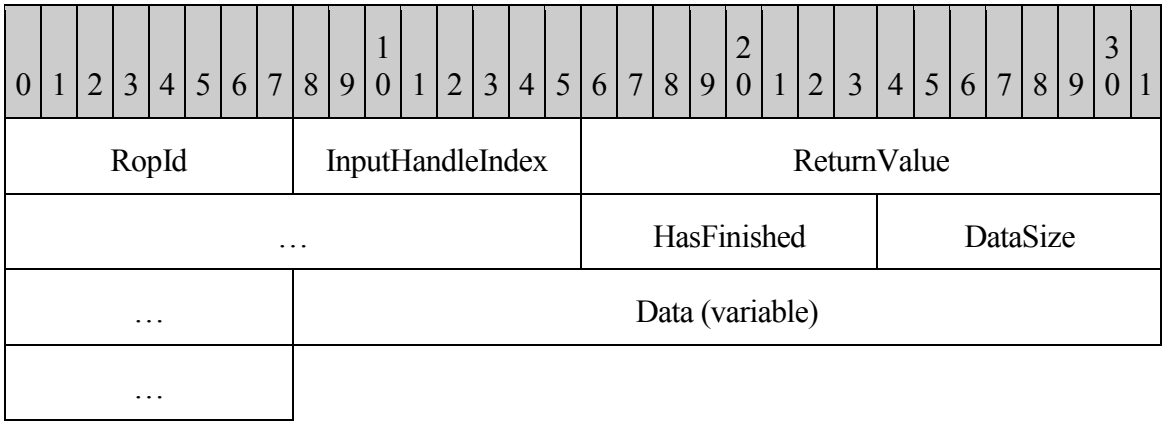
LongTermId (24 bytes): LongTermId structure. The structure specifies the folder for which to get per-user information. The format of the **LongTermId** structure is specified in [MS-OXCDATA].

WantIfChanged (1 byte): 8-bit Boolean. This value specifies whether to return data if it hasn't changed.

DataOffset (4 bytes): Unsigned 32-bit integer. This value specifies the location in the per-user information stream to start reading.

MaxDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the maximum number of bytes of per-user information to read.

2.2.2.12.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x63.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

HasFinished (1 byte): 8-bit Boolean. This value specifies whether this operation reached the end of the per-user information stream.

DataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Data** field in bytes.

Data (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **DataSize**. This array is the per-user data read.

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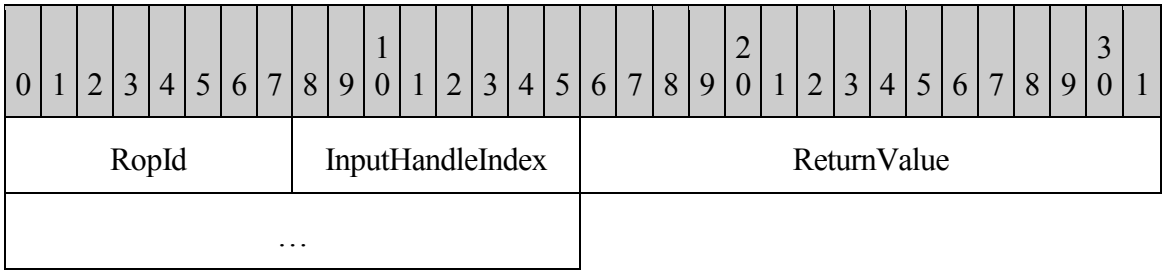
2.2.2.12.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x63.

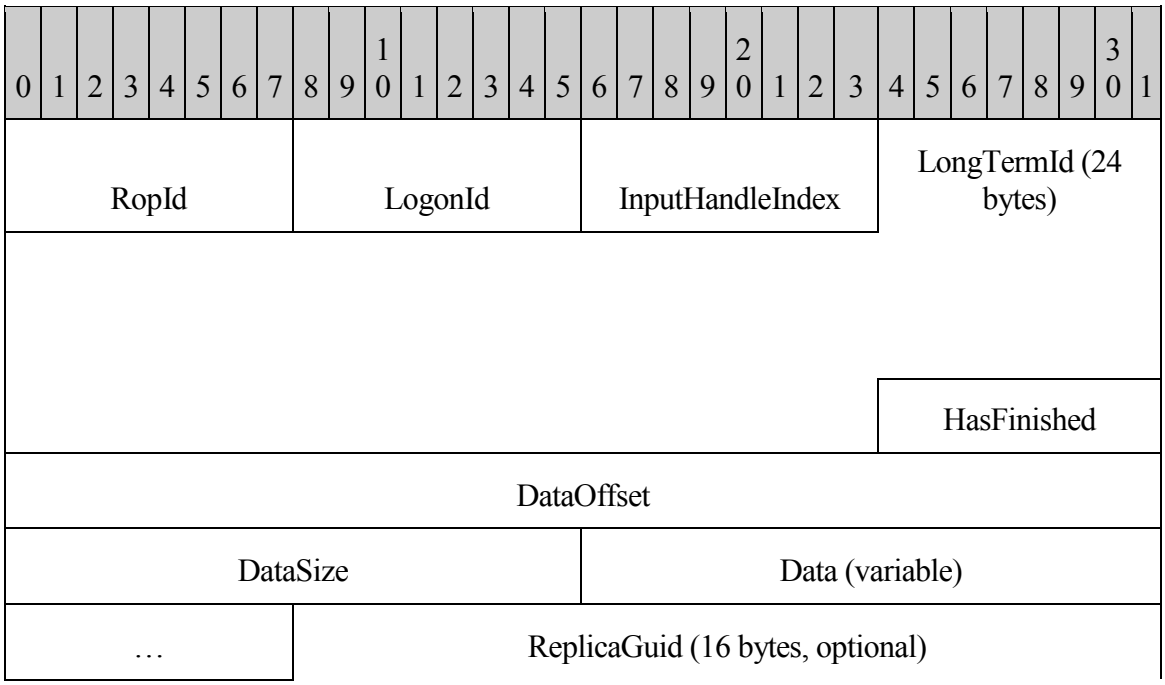
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.2.13 RopWritePerUserInformation

This remote operation sets per-user information for a public folder. More detailed information about this operation can be found in [MS-OXCSTOR].

2.2.2.13.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x64.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

LongTermId (24 bytes): LongTermId structure. The structure specifies the folder for which to set per-user information. The format of the **LongTermId** structure is specified in [MS-OXCDATA].

HasFinished (1 byte): 8-bit Boolean. This value specifies whether this operation specifies the end of the per-user information stream.

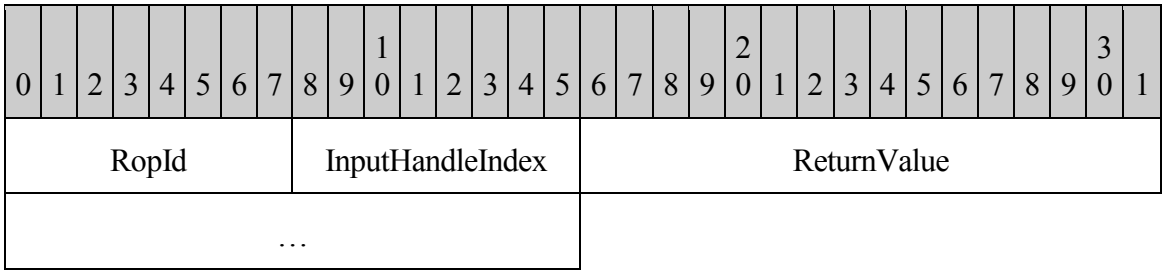
DataOffset (4 bytes): Unsigned 32-bit integer. This value specifies the location in the per-user information stream to start writing.

DataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Data** field in bytes.

Data (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **DataSize**. This array is the per-user data to write.

ReplicaGuid (16 bytes, optional): GUID. This field MUST be present when the **DataOffset** field is 0x00000000 and the logon associated with **LogonId** was created with the Private flag set (see [MS-OXCSTOR] for more information) and MUST NOT be present otherwise.

2.2.2.13.2 Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x64.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

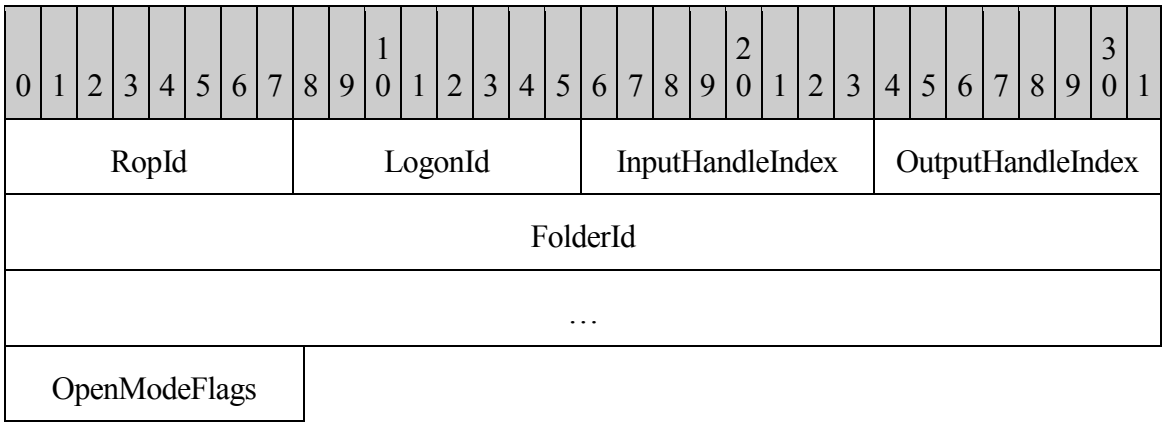
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.3 Folder ROPs

2.2.3.1 RopOpenFolder

This remote operation opens an existing folder in a mailbox. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x02.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

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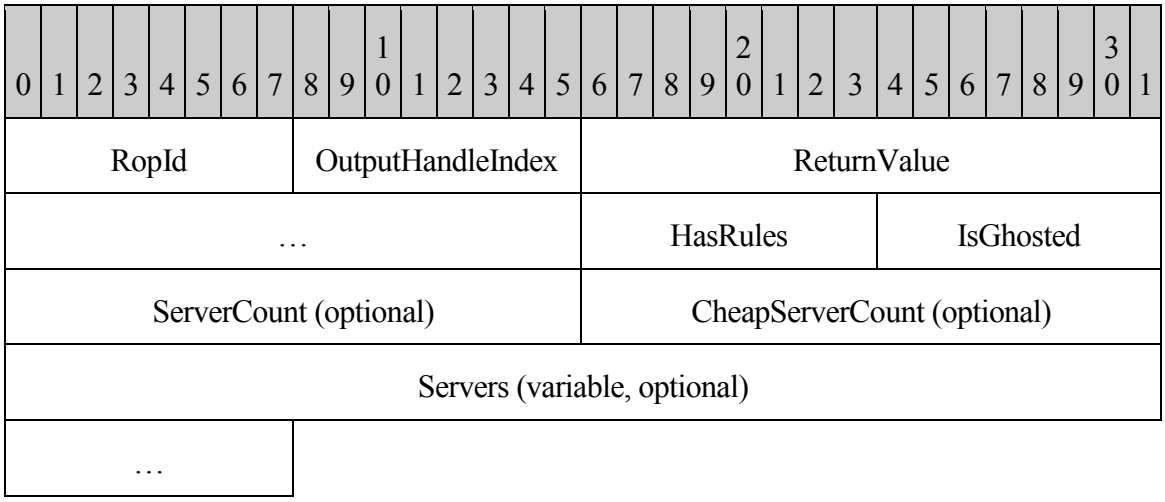
FolderId (8 bytes): 64-bit identifier. This identifier specifies the folder to be opened.

OpenModeFlags (1 byte): 8-bit flags structure. These flags are used to control how the folder is opened. The possible flags values are specified in [MS-OXCFOLD].

2.2.3.1.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x02.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

HasRules (1 byte): 8-bit Boolean. This value indicates whether there are rules associated with the folder.

IsGhosted (1 byte): 8-bit Boolean. This value specifies whether the folder is a ghosted folder.

ServerCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. This value specifies the number of strings in the **Servers** field.

CheapServerCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. This value specifies the number of values in **Servers** that refers to lowest cost servers.

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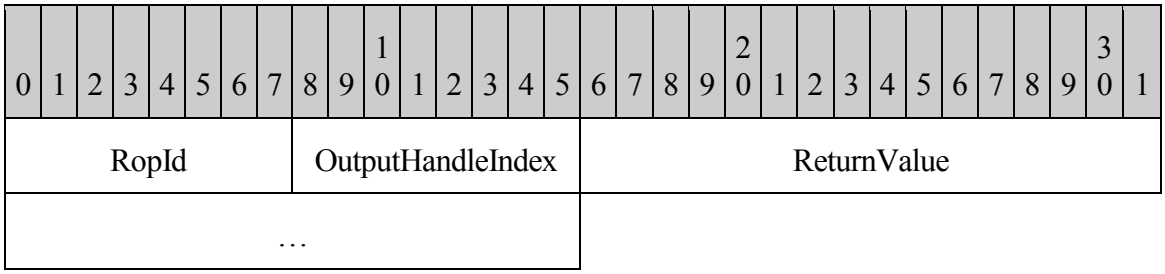
Servers (variable, optional): List of null-terminated ASCII strings. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. There MUST be **ServersCount** number of strings in this list. These strings specify which servers have replicas of this folder.

2.2.3.1.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x02.

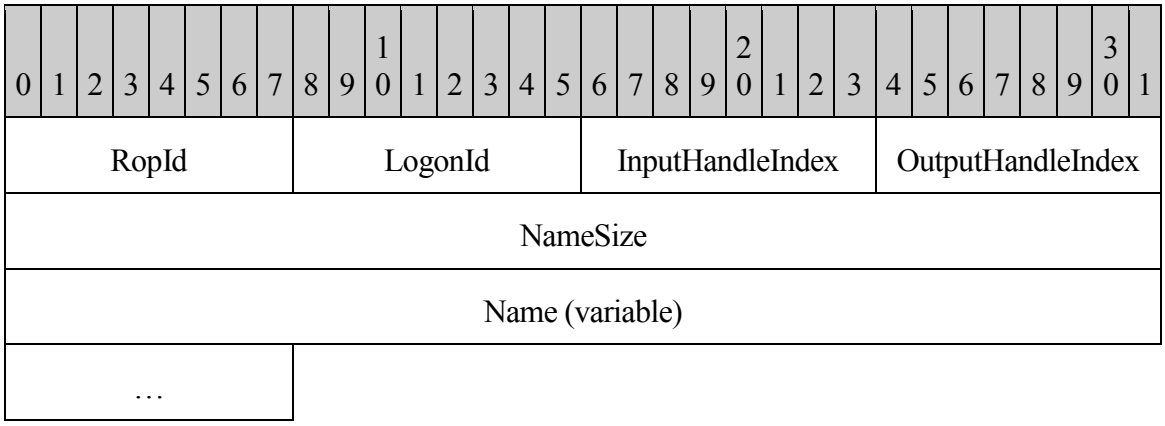
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.3.2 RopOpenPublicFolderByName

This remote operation opens an existing folder in a database based on its name. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x87.

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LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

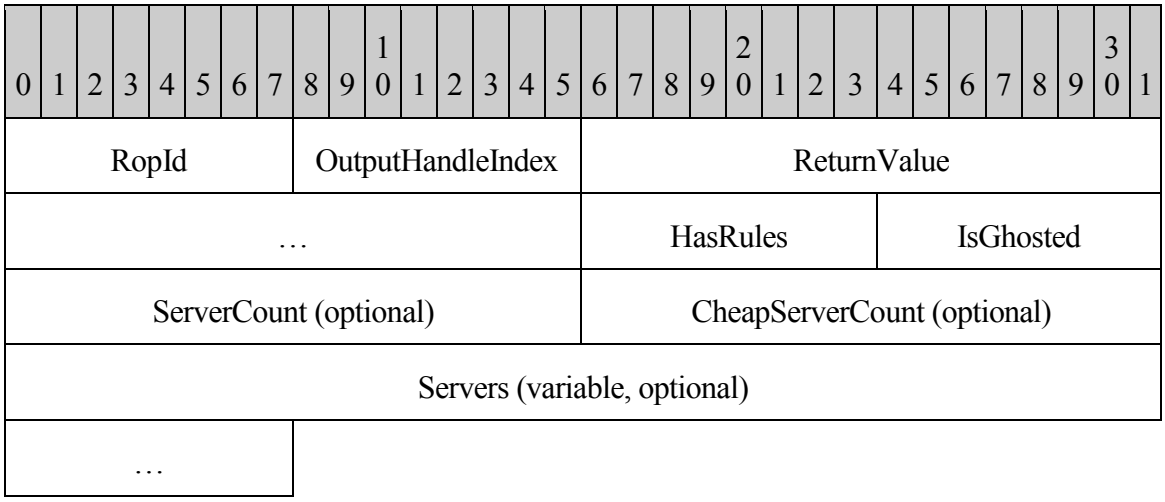
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

NameSize (4 bytes): Unsigned 32-bit integer. This value specifies the length of the **Name** field.

Name (variable): Null-terminated ASCII string. This field MUST contain the same number of characters (including the null character) as specified in the **NameSize** field. This string specifies the name of the folder.

2.2.3.2.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x87.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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HasRules (1 byte): 8-bit Boolean. This value indicates whether there are rules associated with the folder.

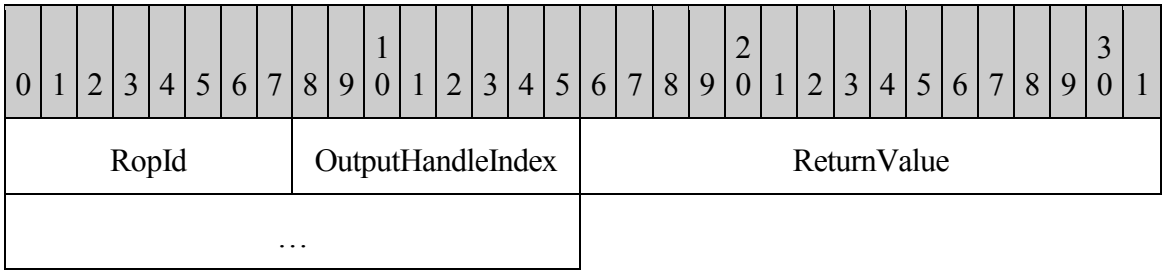
IsGhosted (1 byte): 8-bit Boolean. This value specifies whether the folder is a ghosted folder.

ServerCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. This value specifies the number of strings in the **Servers** field.

CheapServerCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. This value specifies the number of values in **Servers** that refers to lowest cost servers.

Servers (variable, optional): List of null-terminated ASCII strings. This field MUST be present if **IsGhosted** is non-zero and MUST NOT be present if **IsGhosted** is zero. There MUST be **ServersCount** number of strings in this list. These strings specify which servers have replicas of this folder.

2.2.3.2.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x87.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.3.3 RopCreateFolder

This remote operation creates a new subfolder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.3.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								InputHandleIndex								OutputHandleIndex							
FolderType								UseUnicodeStrings								OpenExisting								Reserved							
DisplayName (variable)																															
…								Comment (variable)																							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1C.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

FolderType (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCFOLD]. This value specifies what type of folder to create.

UseUnicodeStrings (1 byte): 8-bit Boolean. This value specifies whether the **DisplayName** and **Comment** are specified in Unicode or not.

OpenExisting (1 byte): 8-bit Boolean. This value specifies whether this operation opens or fails when a folder already exists.

Reserved (1 byte): Reserved. The client MUST specify 0x00 for this field.

DisplayName (variable): Null-terminated string. If **UseUnicodeStrings** is non-zero, this field MUST be specified using Unicode characters. If **UseUnicodeStrings** is zero, this field MUST be specified using ASCII characters. This string specifies the name of the created folder.

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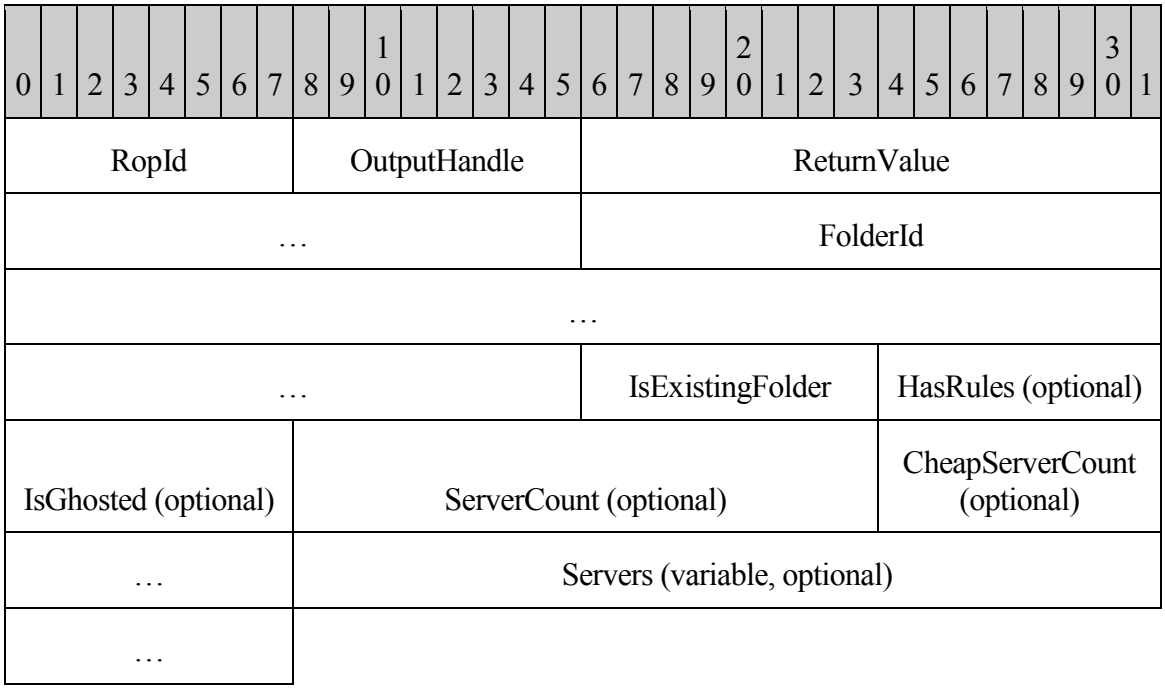
Comment (variable): Null-terminated string. If **UseUnicodeStrings** is non-zero, this field MUST be specified using Unicode characters. If **UseUnicodeStrings** is zero, this field MUST be specified using ASCII characters. This string specifies the folder comment associated with the created folder.

2.2.3.3.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1C.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

FolderId (8 bytes): 64-bit Identifier. This value identifies the folder created or opened.

IsExistingFolder (1 byte): 8-bit Boolean. This value indicates whether an existing folder was opened or a new folder was created.

HasRules (1 byte, optional): 8-bit Boolean. This field MUST be present if the **IsExistingFolder** field is non-zero and MUST NOT be present otherwise. This value indicates whether there are rules associated with the folder.

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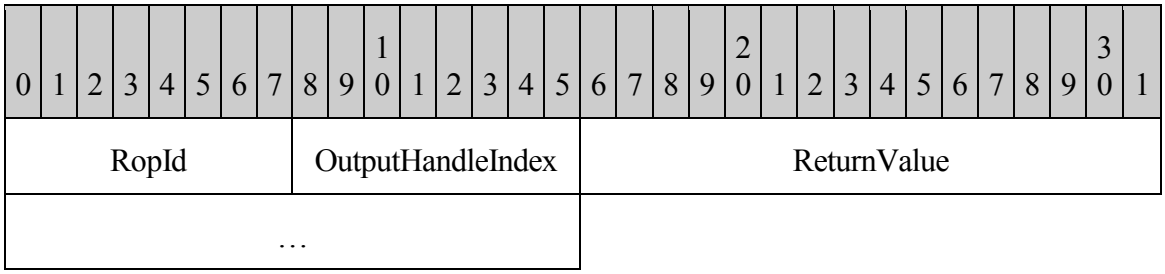
IsGhosted (1 byte, optional): 8-bit Boolean. This field MUST be present if the **IsExistingFolder** field is non-zero and MUST NOT be present otherwise. This value indicates whether the server is an active replica of this folder.

ServerCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if both **IsExistingFolder** and **IsGhosted** are non-zero and MUST NOT be present otherwise. This value specifies the number of strings in the **Servers** field.

CheapServerCount (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present if both **IsExistingFolder** and **IsGhosted** are non-zero and MUST NOT be present otherwise. This value specifies the number of values in **Servers** that refers to lowest cost servers.

Servers (variable, optional): List of null-terminated ASCII strings. This field MUST be present if both **IsExistingFolder** and **IsGhosted** are non-zero and MUST NOT be present otherwise. There MUST be **ServersCount** number of strings in this list. These strings specify which servers have replicas of this folder.

2.2.3.3.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1C.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.3.4 RopDeleteFolder

This remote operation deletes a subfolder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.4.1 Request Buffer

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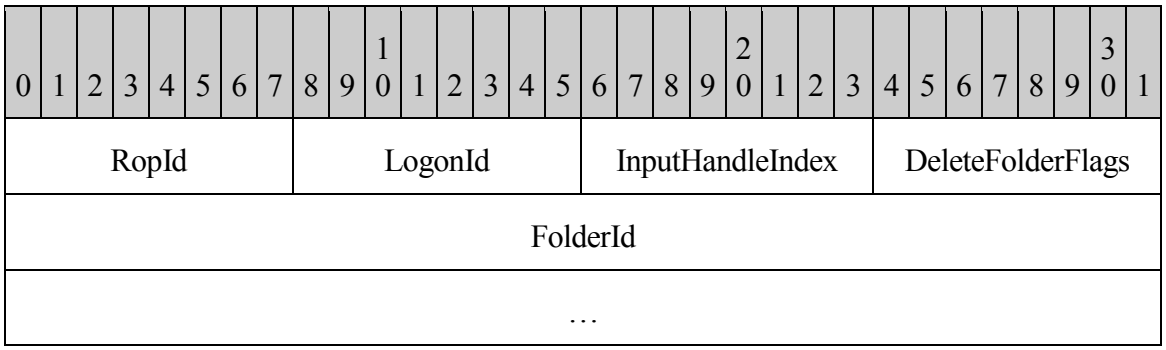


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1D.

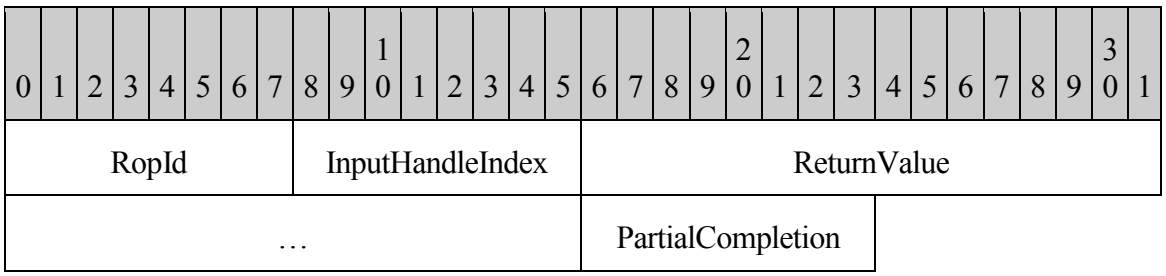
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

DeleteFolderFlags (1 byte): 8-bit flags structure. These flags control how to delete the folder. The possible flags values are specified in [MS-OXCFOLD]

FolderId (8 bytes): 64-bit identifier. This value identifies the folder to be deleted.

2.2.3.4.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1D.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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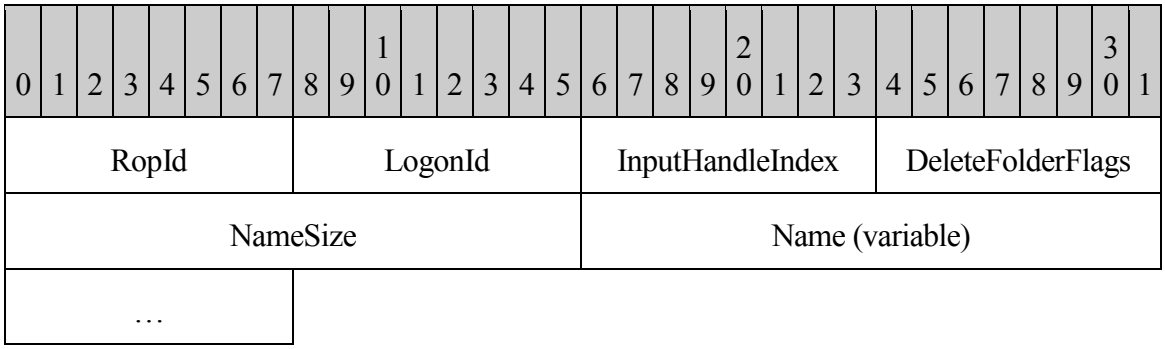
PartialCompletion (1 byte): 8-bit Boolean. This value specifies whether the operation was partially completed.

2.2.3.5 RopDeletePublicFolderByName

This remote operation deletes a subfolder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.5.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x8A.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

DeleteFolderFlags (1 byte): 8-bit flags structure. These flags control how to delete the folder. The possible flags values are specified in [MS-OXCFOLD]

NameSize (4 bytes): Unsigned 32-bit integer. This value specifies the length of the **Name** field.

Name (variable): Null-terminated ASCII string. This field MUST contain the same number of characters (including the null character) as specified in the **NameSize** field. This string specifies the name of the folder.

2.2.3.5.2 Response Buffer

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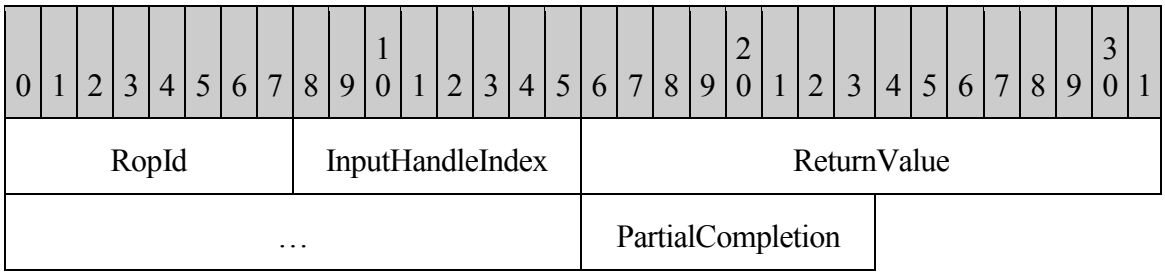


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x8A.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

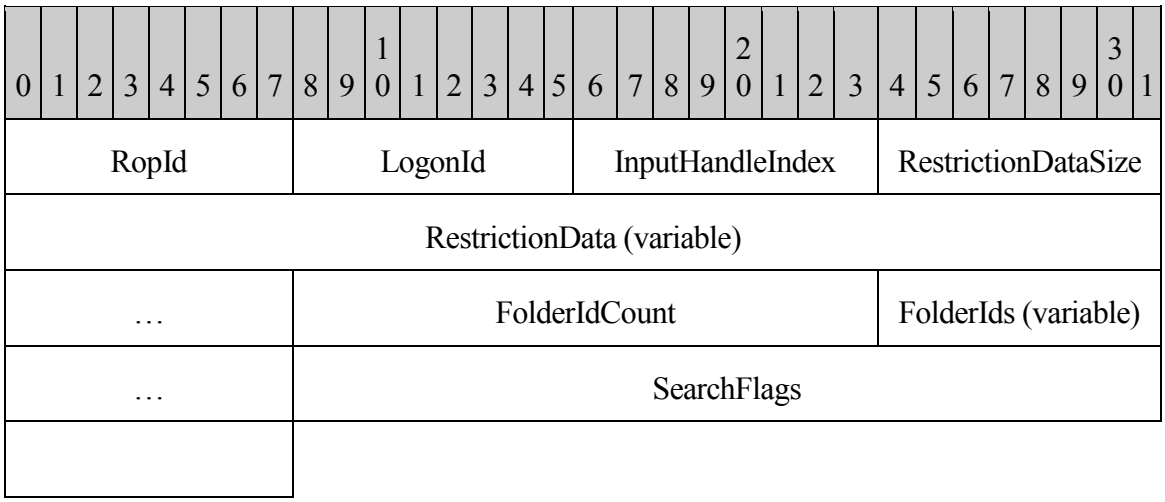
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value specifies whether operation was partially completed.

2.2.3.6 RopSetSearchCriteria

This remote operation sets the search criteria for a search folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.6.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x30.

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LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

RestrictionDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the length of the **RestrictionData** field.

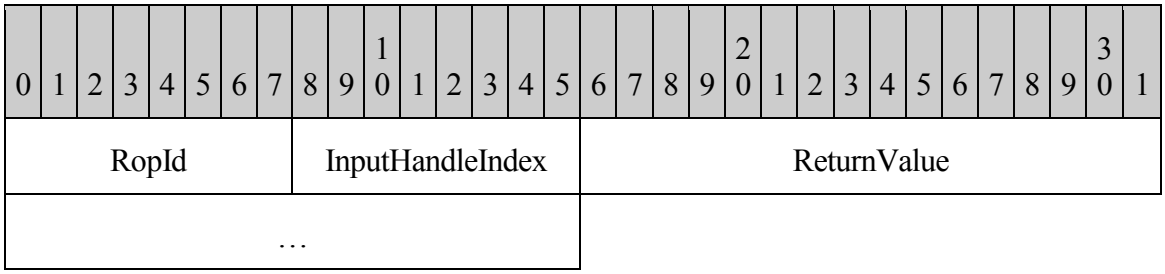
RestrictionData (variable): Restriction. This field MUST be **RestrictionDataSize** bytes long. The format of this field is specified in [MS-OXCDATA]. This value specifies the filter for this search folder.

FolderIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of IDs in the **FolderIds** field.

FolderIds (variable): Array of 64-bit identifiers. This field MUST contain **FolderIdCount** identifiers. These identifiers specify which folders are searched.

SearchFlags (4 bytes): 32-bit flags structure. These flags control the search for a search folder.

2.2.3.6.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x30.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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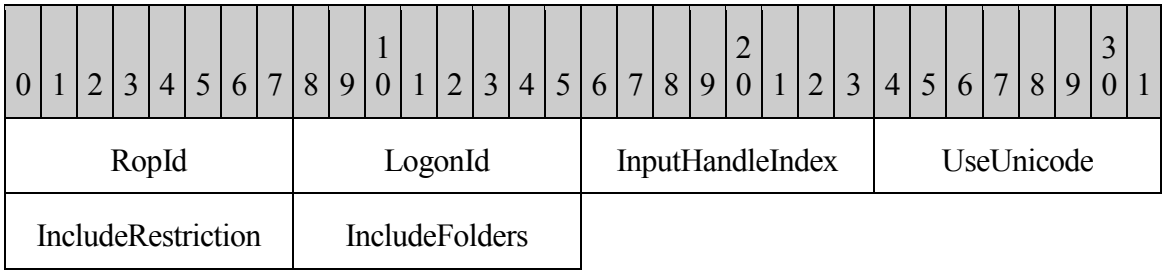
2.2.3.7 RopGetSearchCriteria

This remote operation gets the search criteria for a search folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.7.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x31.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

UseUnicode (1 byte): 8-bit Boolean. This value specifies whether the client wants the restriction to include Unicode strings.

IncludeRestriction (1 byte): 8-bit Boolean. This value specifies whether the server includes the restriction information in the response.

IncludeFolders (1 byte): 8-bit Boolean. This value specifies whether the server includes the folders list in the response.

2.2.3.7.2 Success Response Buffer

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…	FolderIdCount	FolderIds (variable)
…		SearchFlags
…		

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x31.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RestrictionDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the length of the **RestrictionData** field.

RestrictionData (variable): Restriction. This field MUST be **RestrictionDataSize** bytes long. The format of this field is specified in [MS-OXCDATA]. This value specifies the filter for this search folder.

FolderIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of IDs in the **FolderIds** field.

FolderIds (variable): Array of 64-bit identifiers. This field MUST contain **FolderIdCount** identifiers. These identifiers specify which folders are searched.

SearchFlags (4 bytes): 32-bit flags structure. These flags control the search for a search folder.

2.2.3.7.3 Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x31.

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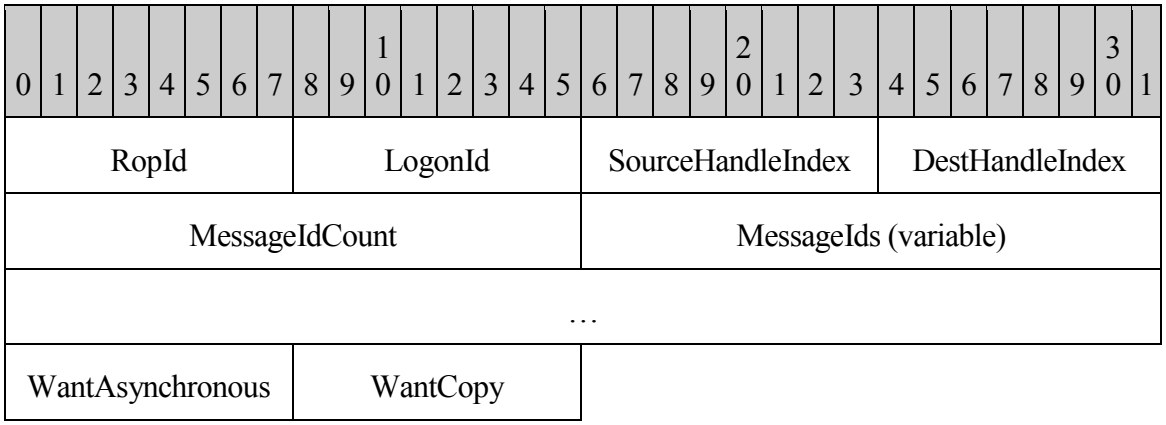
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.3.8 RopMoveCopyMessages

This remote operation either moves or copies messages from a source folder to a destination folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.8.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x33.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the source Server Object is stored. More information about Server Objects can be found in section 3.

DestHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the destination Server Object is stored. More information about Server Objects can be found in section 3.

MessageIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **MessageIds** field.

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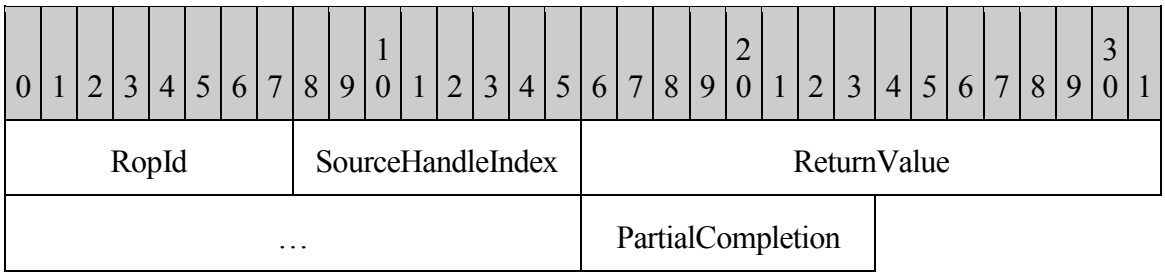
MessageIds (variable): Array of 64-bit identifiers. This field MUST contain the same number of identifiers as specified in the **MessageIdCount** field. These identifiers specify which messages to move or copy.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

WantCopy (1 byte): 8-bit Boolean. This value specifies whether the operation is a copy or a move.

2.2.3.8.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x33.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

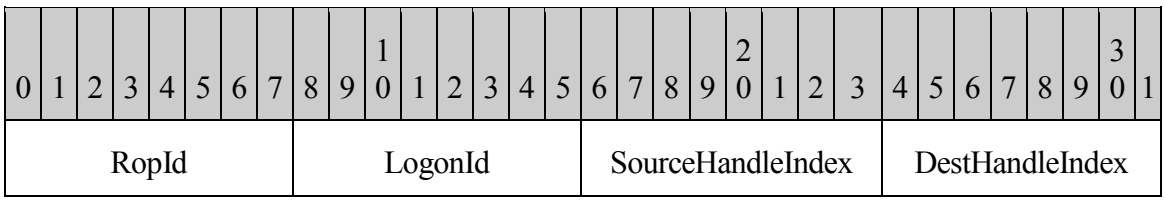
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed.

2.2.3.9 RopMoveFolder

This remote operation moves a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.9.1 Request Buffer



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WantAsynchronous	UseUnicode	FolderId
…		NewFolderName (variable)
…		

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x35.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the source Server Object is stored. More information about Server Objects can be found in section 3.

DestHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the destination Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

UseUnicode (1 byte): 8-bit Boolean. This value specifies whether the NewFolderName field is specified in Unicode or ASCII.

FolderId (8 bytes): 64-bit identifier. This value identifies the folder to be moved.

NewFolderName (variable): Null terminated string. If the **UseUnicode** field is non-zero, then this field MUST be specified in Unicode. Otherwise, this field is specified in ASCII. This string specifies the name for the new moved folder.

2.2.3.9.2 Success Response Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								SourceHandleIndex								ReturnValue															
…																PartialCompletion															

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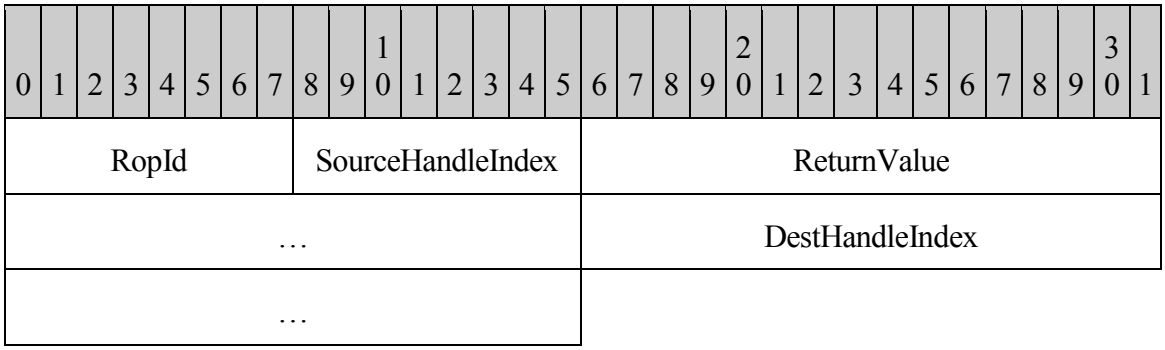
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x35.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed.

2.2.3.9.3 Null Destination Failure Response Buffer



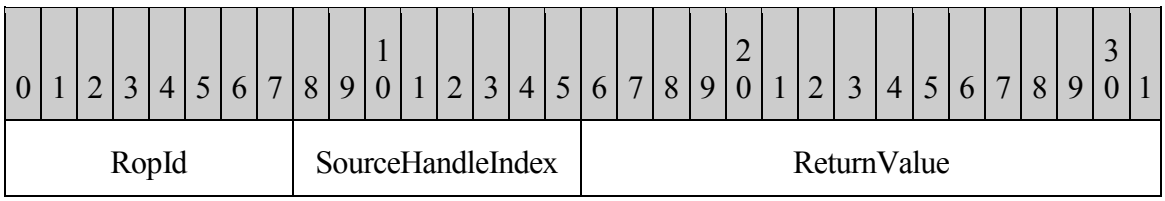
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x35.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000503.

DestHandleIndex (4 bytes): Unsigned 32-bit integer. This index MUST be set to the **DestHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

2.2.3.9.4 Failure Response Buffer



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…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x35.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000 or 0x00000503.

2.2.3.10 RopCopyFolder

This remote operation copies a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.10.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								SourceHandleIndex								DestHandleIndex							
WantAsynchronous								WantRecursive								UseUnicode								FolderId							
…																															
…																								NewFolderName (variable)							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x36.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the source Server Object is stored. More information about Server Objects can be found in section 3.

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DestHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the destination Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

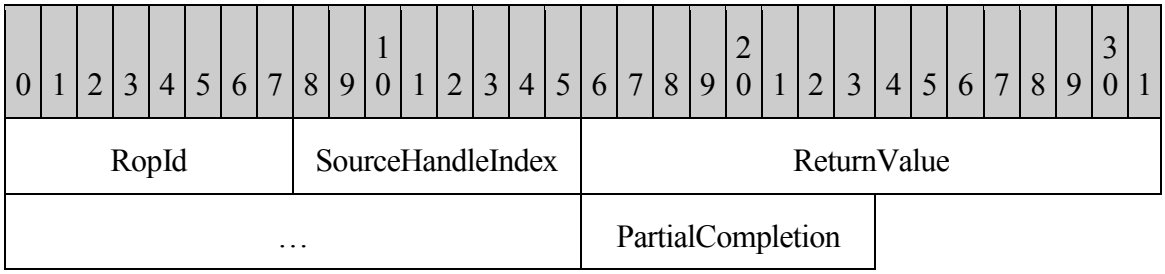
WantRecursive (1 byte): 8-bit Boolean. This value specifies that the copy is recursive.

UseUnicode (1 byte): 8-bit Boolean. This value specifies whether the NewFolderName field is specified in Unicode or ASCII.

FolderId (8 bytes): 64-bit identifier. This value identifies the folder to be copied.

NewFolderName (variable): Null terminated string. If the **UseUnicode** field is non-zero, then this field MUST be specified in Unicode. Otherwise, this field is specified in ASCII. This string specifies the name for the new copied folder.

2.2.3.10.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x36.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed.

2.2.3.10.3 Null Destination Failure Response Buffer

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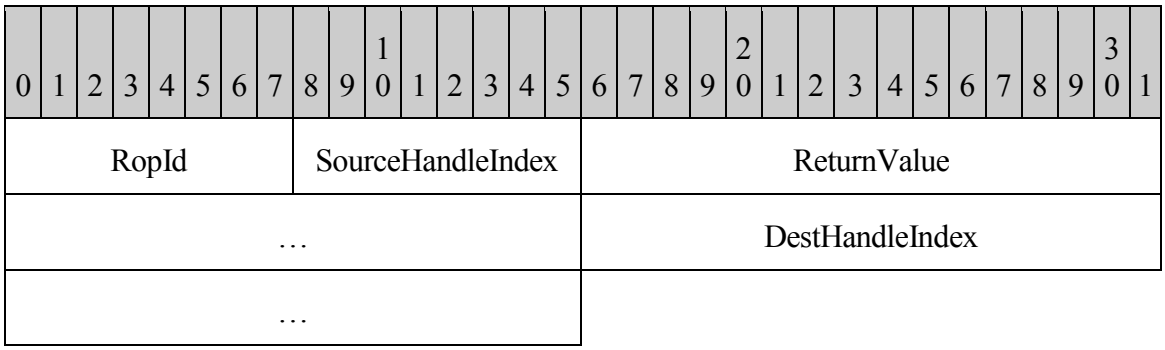


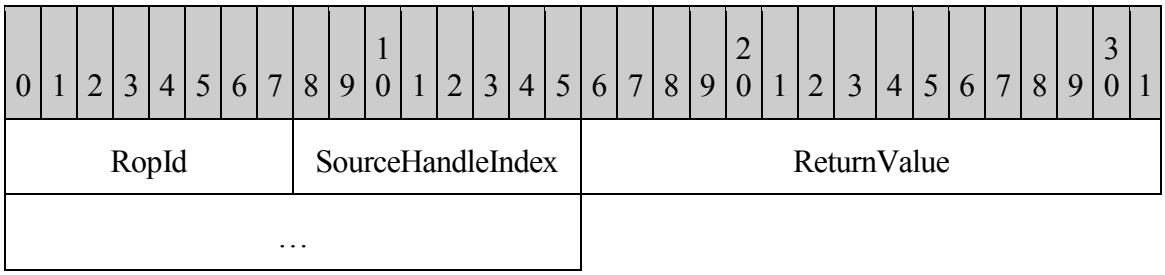
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x36.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000503.

DestHandleIndex (4 bytes): Unsigned 32-bit integer. This index MUST be set to the **DestHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

2.2.3.10.4 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x36.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000 or 0x00000503.

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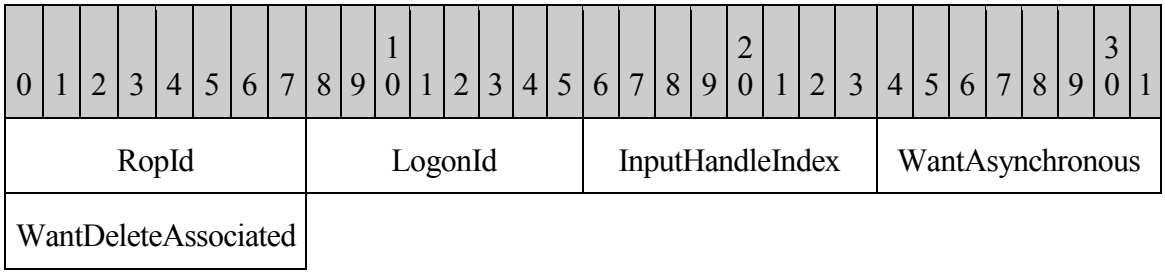
2.2.3.11 RopEmptyFolder

This remote operation deletes all messages and subfolders from a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.11.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x58.

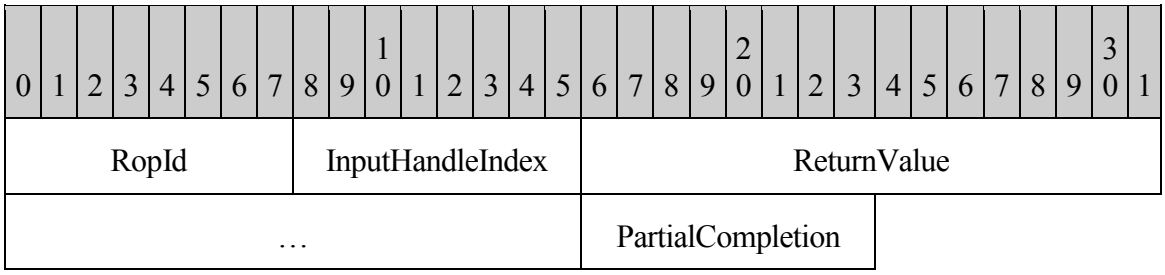
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

WantDeleteAssociated (1 byte): 8-bit Boolean. This value specifies whether the operation also deletes Folder Associated Information messages.

2.2.3.11.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x58.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

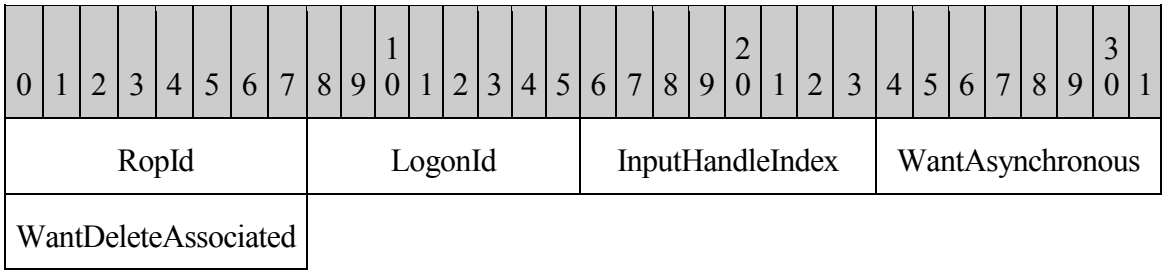
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed.

2.2.3.12 RopHardDeleteMessagesAndSubfolders

This remote operation hard deletes messages and subfolders from a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.12.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x92.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

WantDeleteAssociated (1 byte): 8-bit Boolean. This value specifies whether to also delete Folder Associated Information messages.

2.2.3.12.2 Response Buffer

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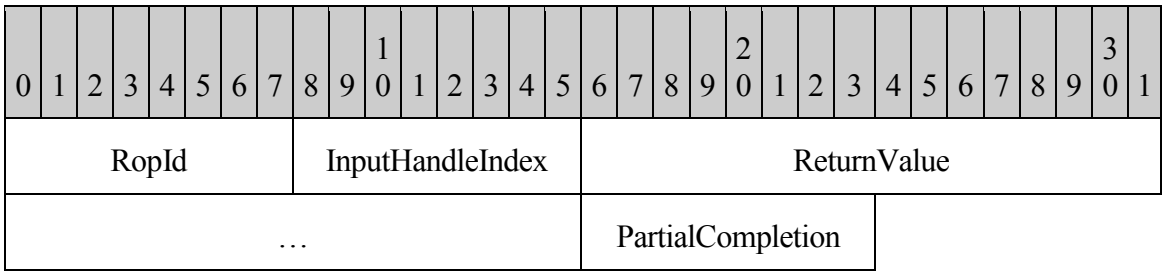


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x92.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

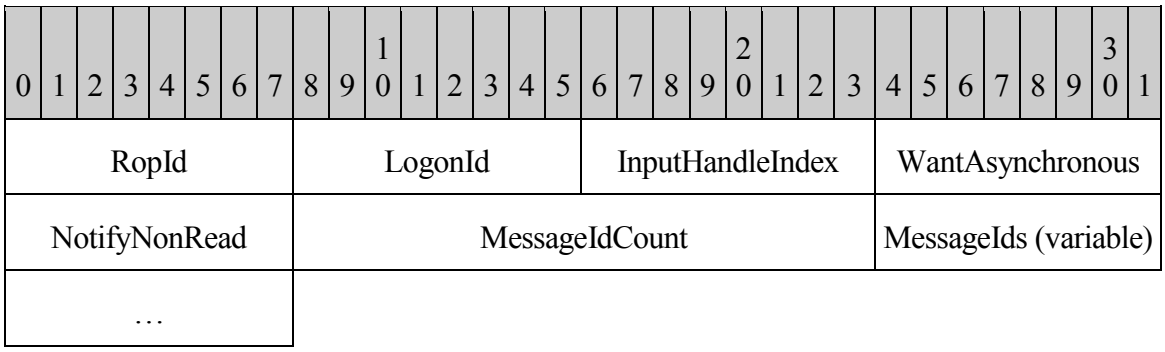
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed.

2.2.3.13 RopDeleteMessages

This remote operation deletes one or more messages in a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.13.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1E.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

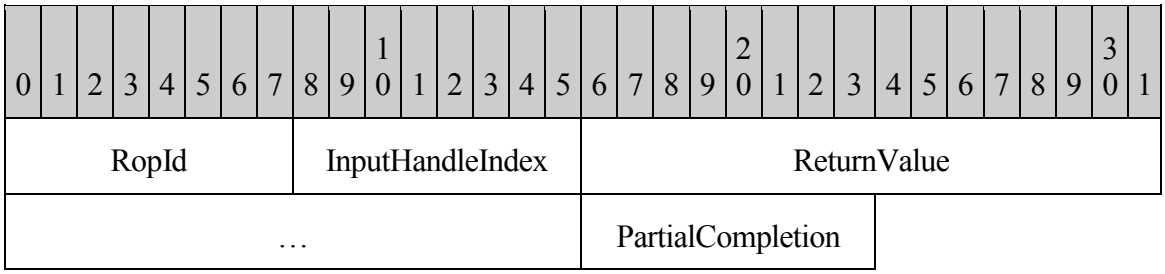
WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

NotifyNonRead (1 byte): 8-bit Boolean. This value specifies whether the server sends non-read notifications to senders.

MessageIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of identifiers in the **MessageIds** field.

MessageIds (variable): Array of 64-bit identifiers. This field MUST contain the same number of identifiers as specified in the **MessageIdCount** field. These IDs specify the messages to be deleted.

2.2.3.13.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1E.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value specifies whether this operation partially completed.

2.2.3.14 RopHardDeleteMessages

This remote operation hard deletes messages in a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.14.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								InputHandleIndex								WantAsynchronous							
NotifyNonRead								MessageIdCount																MessageIds (variable)							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x91.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

NotifyNonRead (1 byte): 8-bit Boolean. This value specifies whether the server sends non-read notifications to senders.

MessageIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of identifiers in the **MessageIds** field.

MessageIds (variable): Array of 64-bit identifiers. This field MUST contain the same number of identifiers as specified in the **MessageIdCount** field. These IDs specify the messages to be hard deleted.

2.2.3.14.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																PartialCompletion															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x91.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

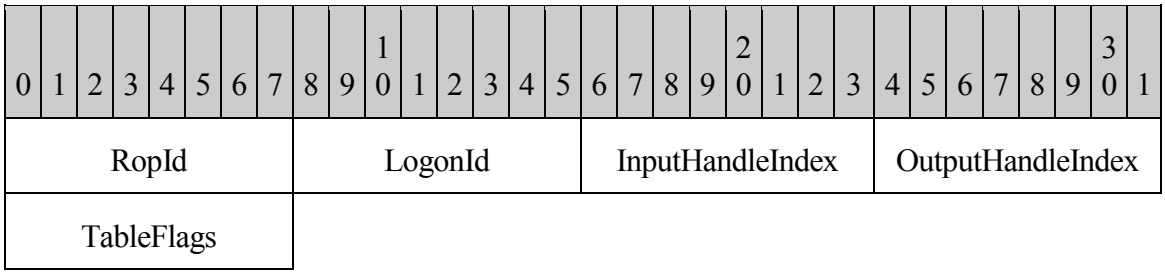
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed.

2.2.3.15 RopGetHierarchyTable

This remote operation gets the subfolder hierarchy table for a folder. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.15.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x04.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

TableFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFOLD]. These flags control the type of table.

2.2.3.15.2 Success Response Buffer

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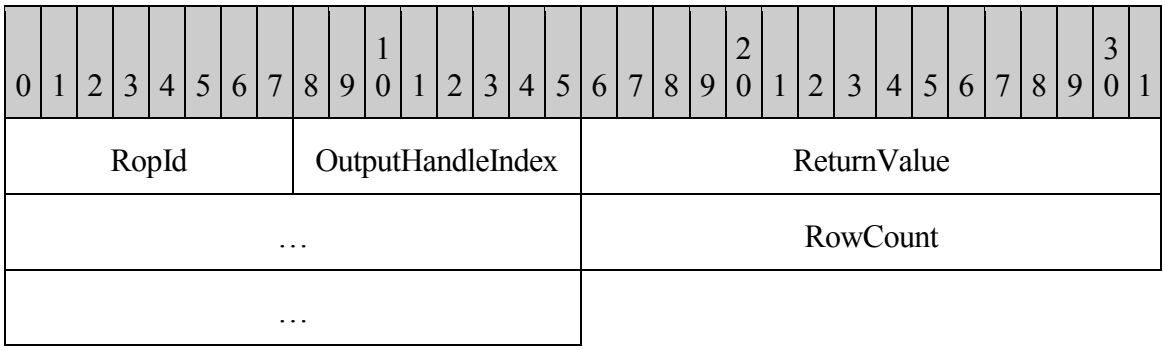


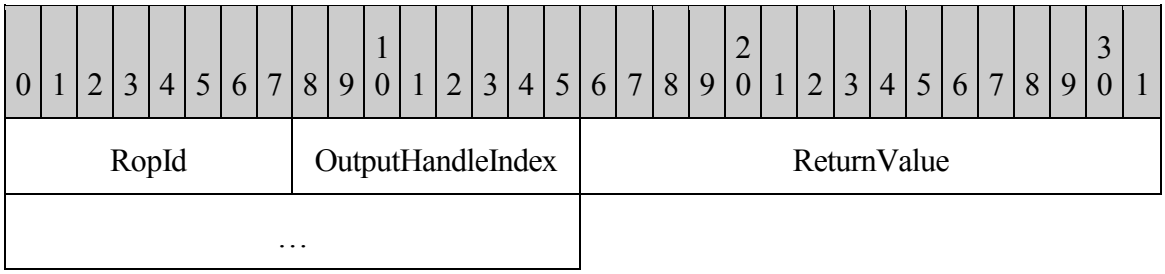
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x04.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RowCount (4 bytes): Unsigned 32-bit integer. This value represents the number of rows in the hierarchy table.

2.2.3.15.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x04.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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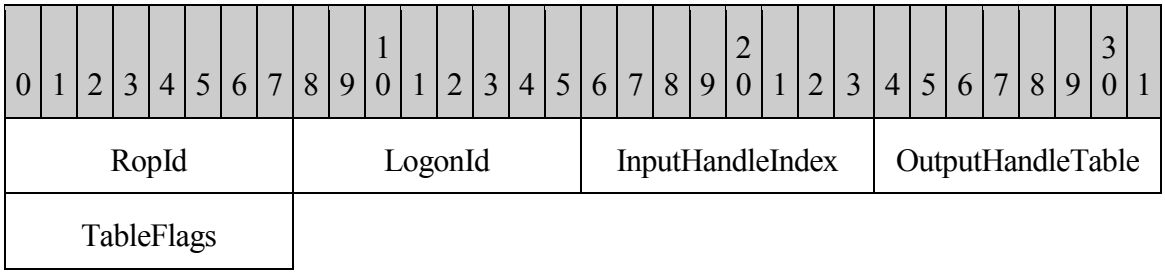
2.2.3.16 RopGetContentsTable

This remote operation gets the content table of a container. More detailed information about this operation can be found in [MS-OXCFOLD].

2.2.3.16.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x05.

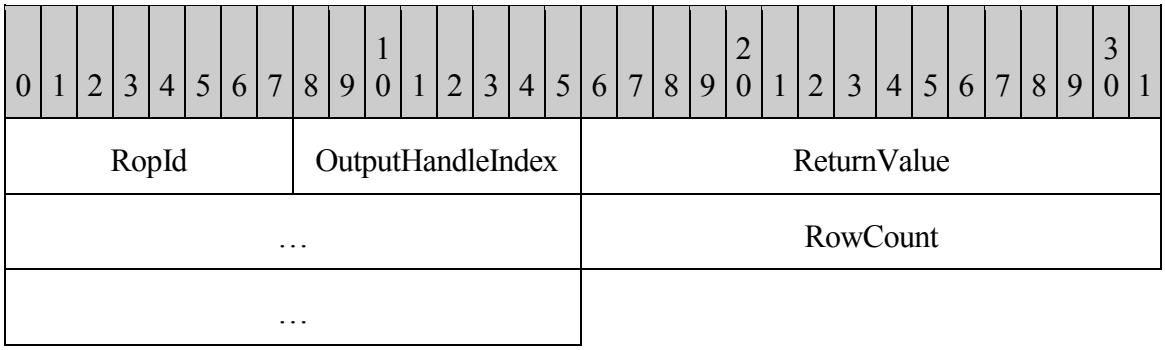
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored.

TableFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFOLD]. These flags control the type of table.

2.2.3.16.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x05.

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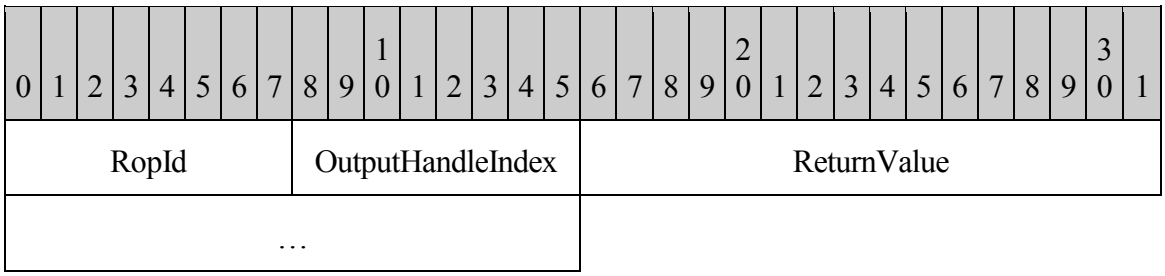
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RowCount (4 bytes): Unsigned 32-bit integer. This value represents the number of rows in the hierarchy table.

2.2.3.16.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x05.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

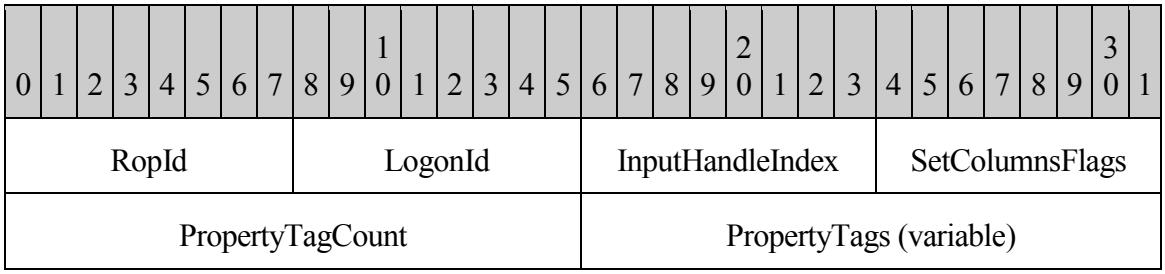
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4 Table ROPs

2.2.4.1 RopSetColumns

This remote operation sets the properties visible on a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.1.1 Request Buffer



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...	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x12.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

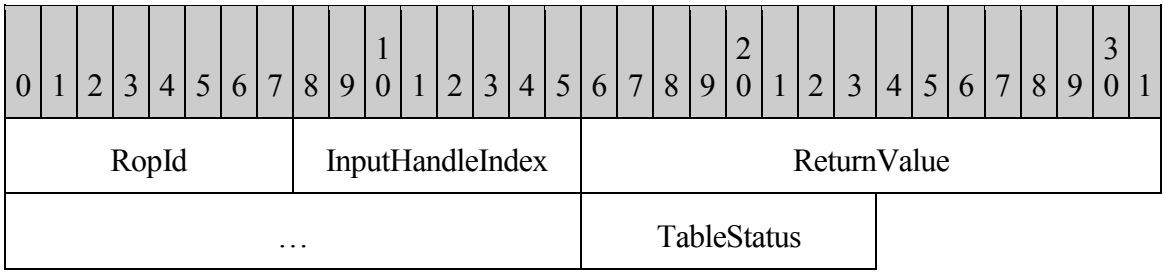
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

SetColumnsFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCTABL]. These flags control this operation.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies how many tags are present in **PropertyTags**.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain **PropertyTagCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values that are visible in table rows.

2.2.4.1.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x12.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

TableStatus (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies the status of the table.

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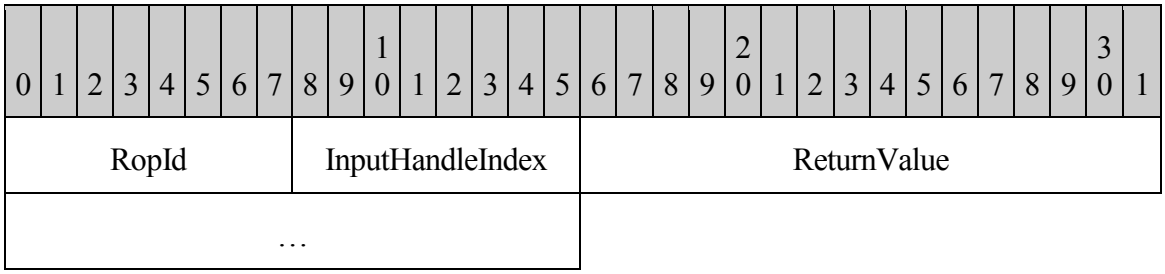
2.2.4.1.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x12.

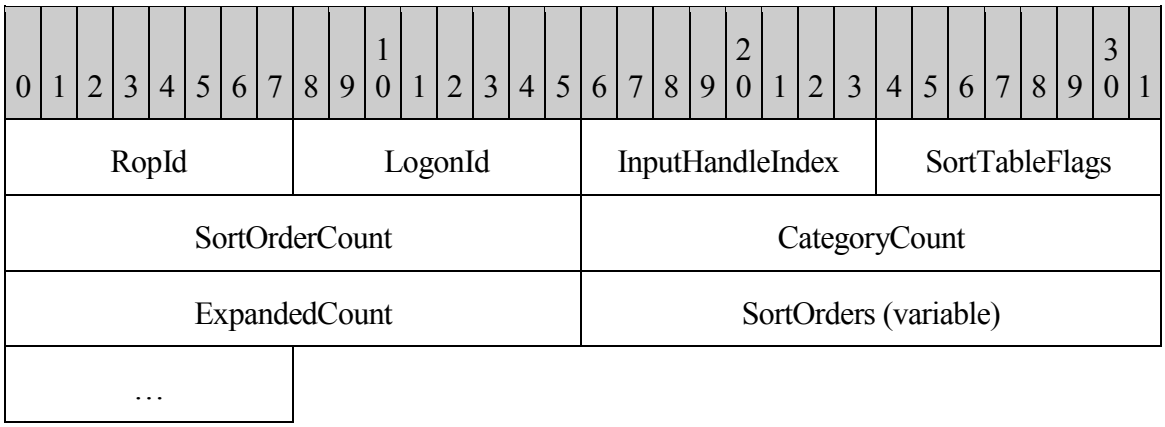
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.2 RopSortTable

This remote operation defines the order of rows of a table based on sort criteria. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x13.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

SortTableFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCTABL]. These flags control this operation.

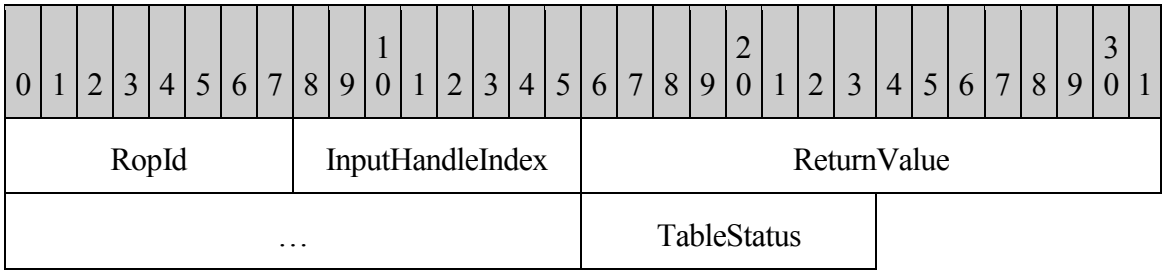
SortOrderCount (2 bytes): Unsigned 16-bit integer. This value specifies how many SortOrder structures are present in **SortOrders**.

CategoryCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of category SortOrder structures in **SortOrders**.

ExpandedCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of expanded categories in **SortOrders**.

SortOrders (variable): Array of **SortOrder** structures. This field MUST contain **SortOrderCount** tags. The format of the **SortOrder** structure is specified in [MS-OXCDATA]. This field specifies the sort order for the rows in the table.

2.2.4.2.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x13.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

TableStatus (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies the status of the table.

2.2.4.2.3 Failure Response Buffer

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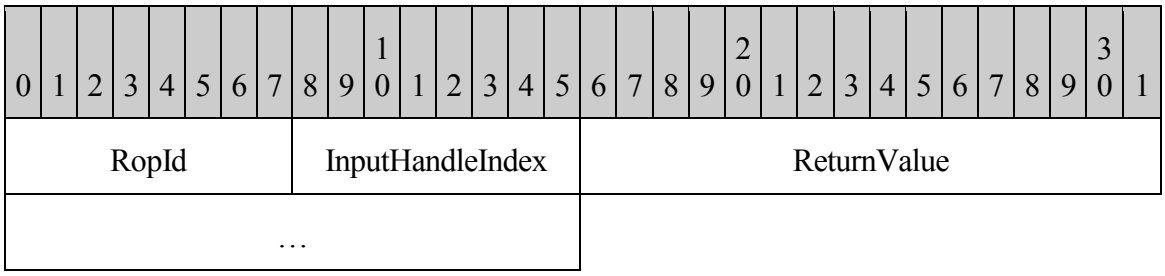


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x13.

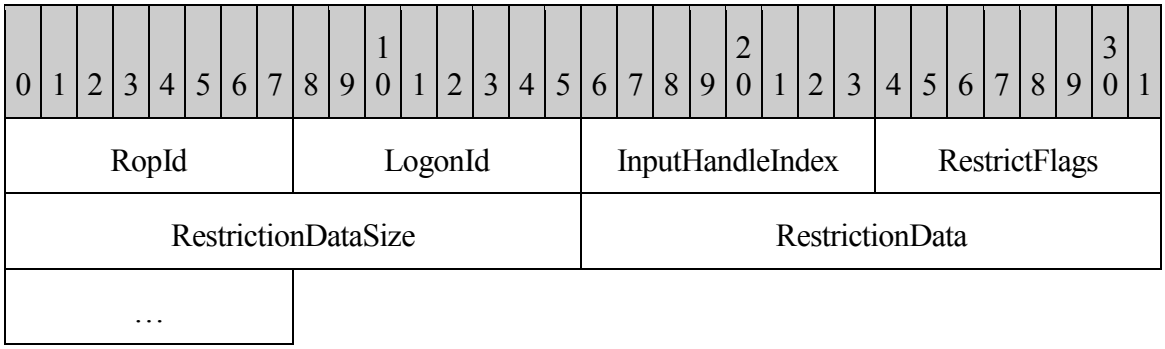
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.3 RopRestrict

This remote operation establishes a filter for a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.3.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x14.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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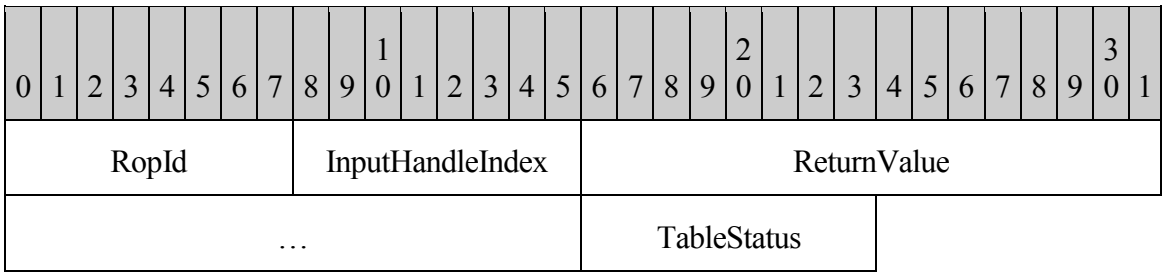
RestrictFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCTABL]. These flags control this operation.

RestrictionDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the length of the **RestrictionData** field.

RestrictionData (variable): Restriction. This field MUST be **RestrictionDataSize** bytes long. The format of this field is specified in [MS-OXCDATA]. This value specifies the filter for this table.

2.2.4.3.2 Success Response Buffer



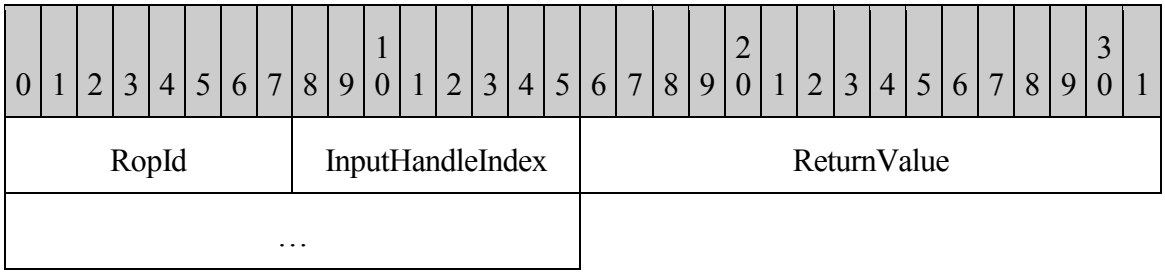
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x14.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

TableStatus (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies the status of the table.

2.2.4.3.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x14.

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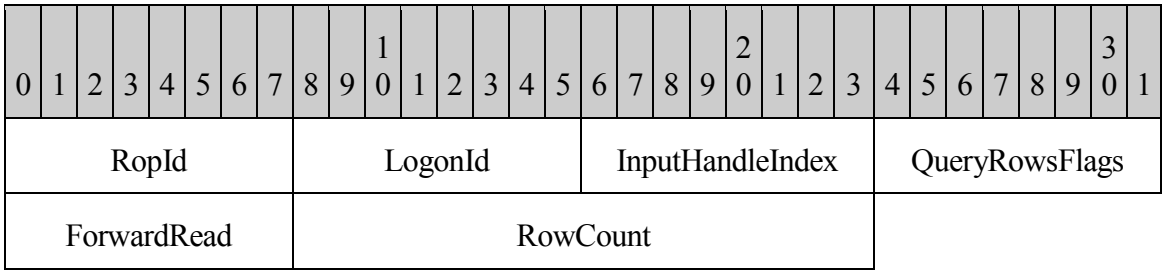
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.4 RopQueryRows

This remote operation retrieves rows from a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.4.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x15.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

QueryRowsFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCTABL]. These flags control this operation.

ForwardRead (1 byte): 8-bit Boolean. This value specifies the direction to read rows.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of requested rows.

2.2.4.4.2 Success Response Buffer

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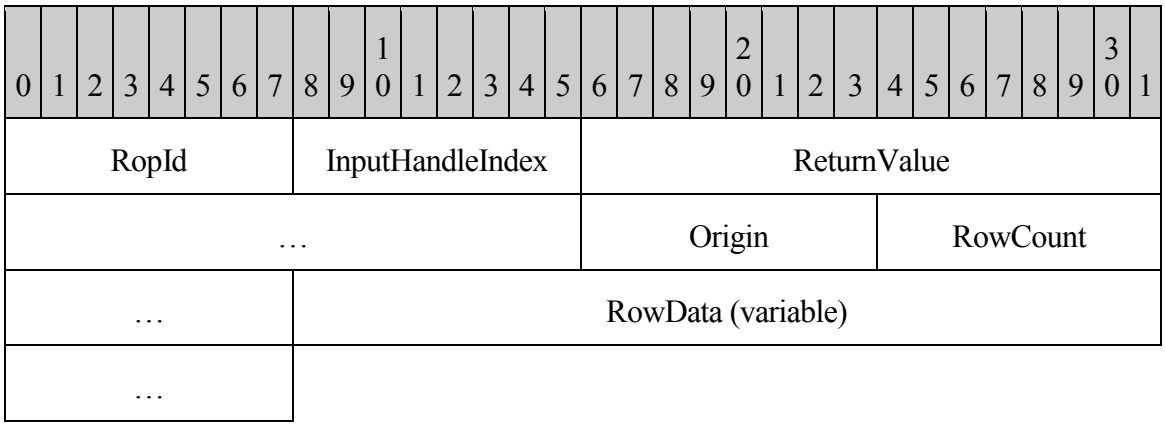


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x15.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

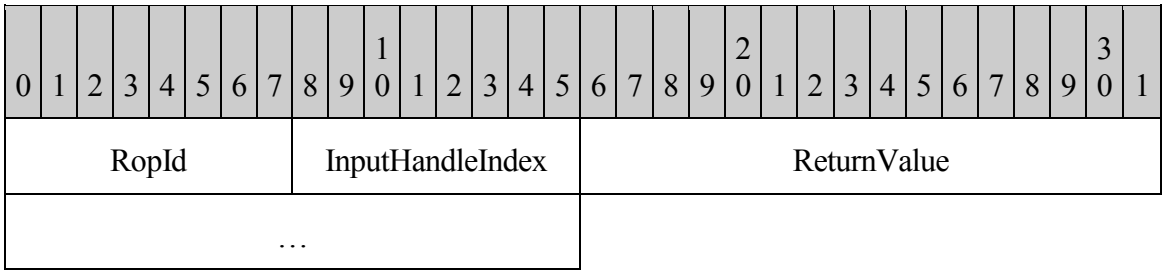
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

Origin (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies current location of the cursor.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **RowData** field.

RowData (variable): List of **PropertyRow** structures. This field MUST contain the same number of structures as specified in **RowCount**. The format of the **PropertyRow** structure is specified in [MS-OXCDATA] and the columns used for these rows were those previously set on this table by a **RopSetColumns**.

2.2.4.4.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x15.

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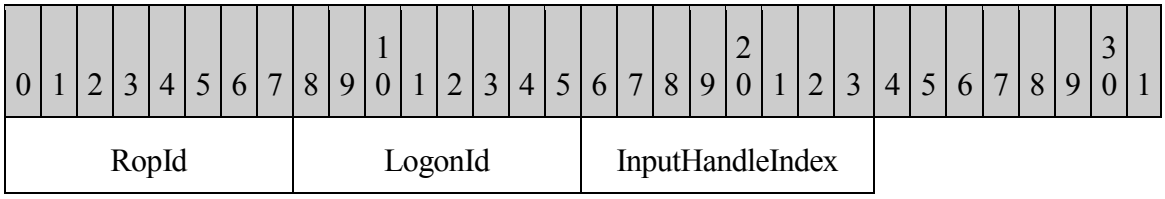
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.5 RopAbort

This remote operation aborts an asynchronous table operation in progress. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.5.1 Request Buffer

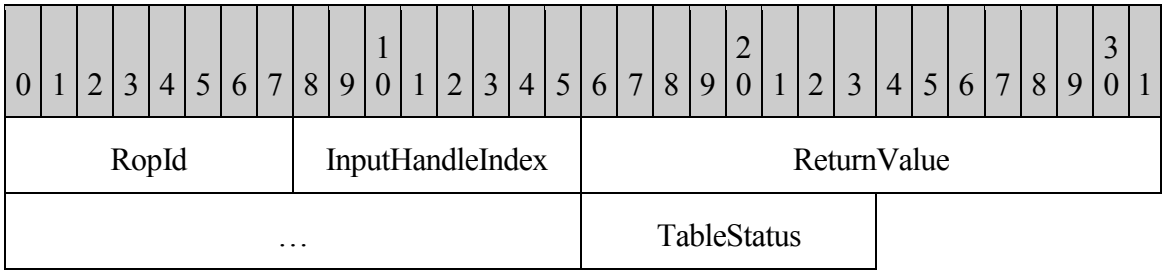


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x38.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.4.5.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x38.

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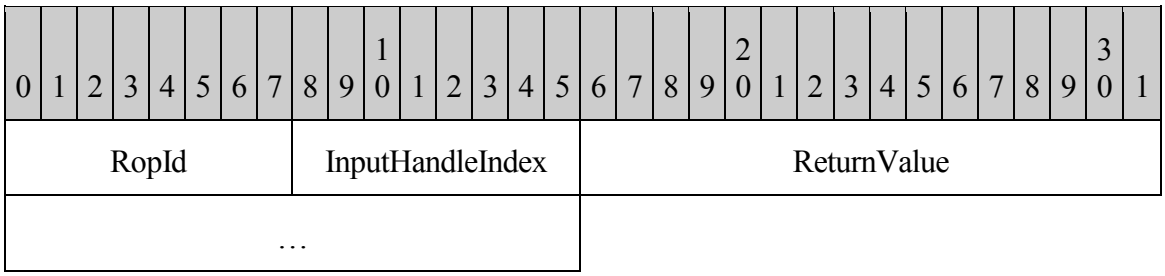
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

TableStatus (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies the status of the table.

2.2.4.5.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x38.

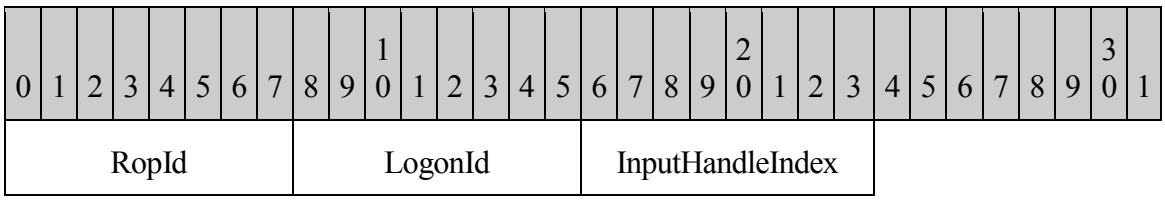
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.6 RopGetStatus

This remote operation gets the status of a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.6.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x16.

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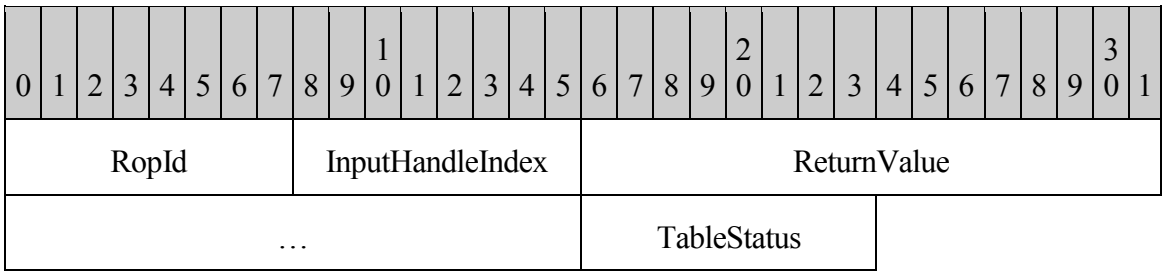
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.4.6.2 Success Response Buffer



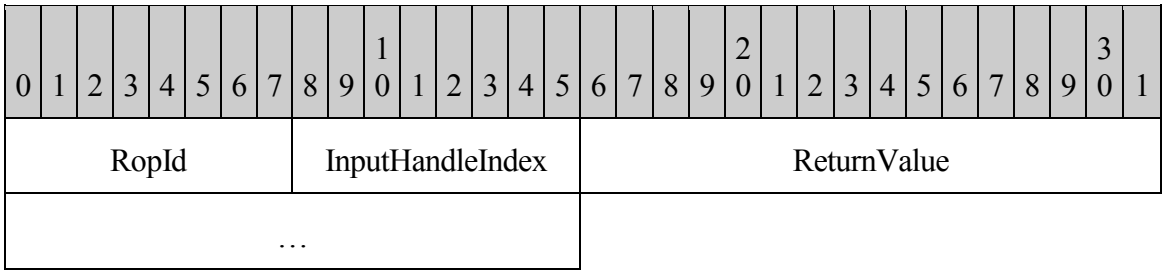
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x16.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

TableStatus (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies the status of the table.

2.2.4.6.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x16.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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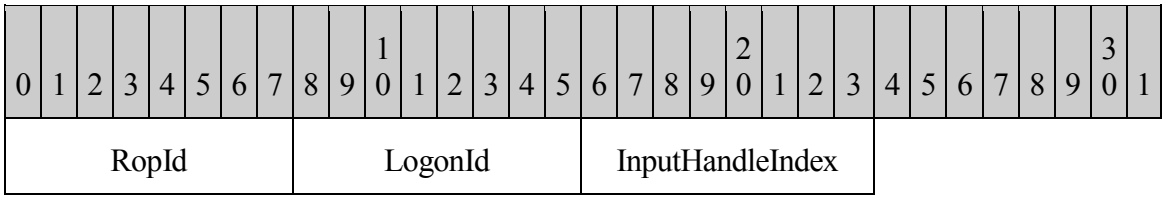
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.7 RopQueryPosition

This remote operation gets the approximate cursor position. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.7.1 Request Buffer

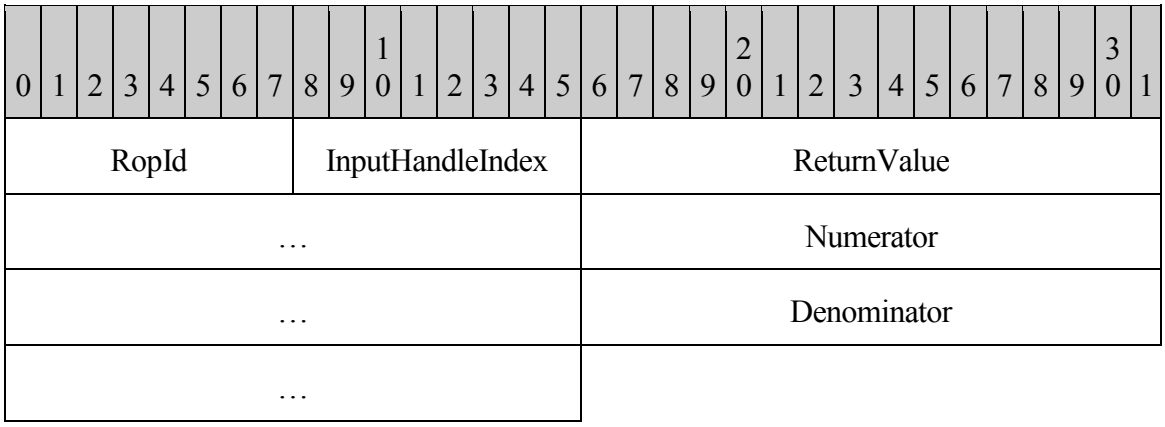


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x17.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.4.7.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x17.

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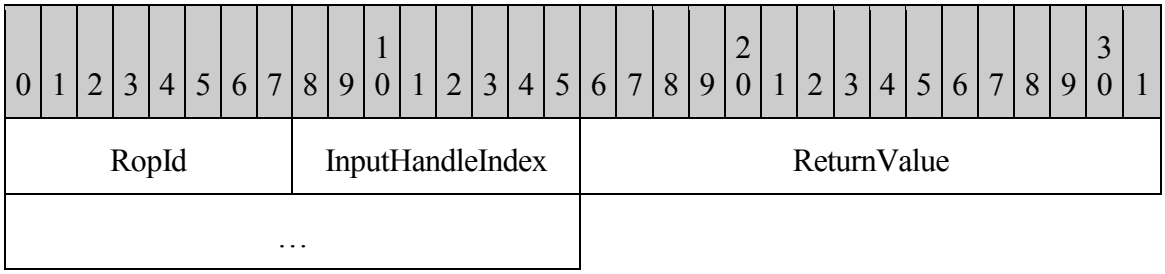
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

Numerator (4 bytes): Unsigned 32-bit integer. This value represents the numerator of the fraction identifying the table position.

Denominator (4 bytes): Unsigned 32-bit integer. This value represents the denominator of the fraction identifying the table position.

2.2.4.7.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x17.

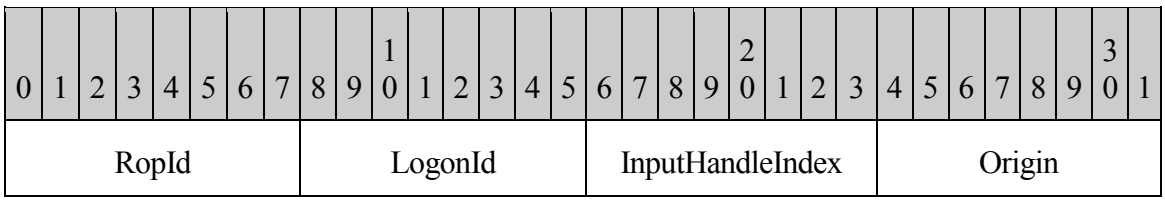
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.8 RopSeekRow

This remote operation moves the cursor to a specific position in a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.8.1 Request Buffer



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RowCount
WantRowMovedCount

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x18.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

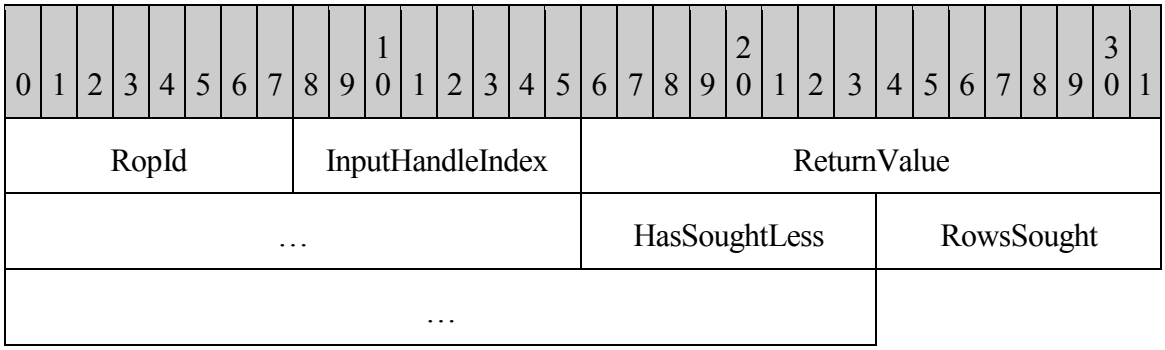
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Origin (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This value specifies the origin of this seek operation.

RowCount (4 bytes): Signed 32-bit integer. This value specifies the direction and the number of rows to seek.

WantRowMovedCount (1 byte): 8-bit Boolean. This value specifies whether the server returns the actual number of rows moved in the response.

2.2.4.8.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x18.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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HasSoughtLess (1 byte): 8-bit Boolean. This value specifies whether the full number of rows sought past was less than the number that was requested.

RowsSought (4 bytes): Signed 32-bit integer. This value specifies the direction and number of rows sought.

2.2.4.8.3 Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x18.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.9 RopSeekRowBookmark

This remote operation moves the cursor to a location specified relative to a user-defined bookmark. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.9.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								InputHandleIndex								BookmarkSize							
…								Bookmark (variable)																							
…								RowCount																							
…								WantRowMovedCount																							

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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x19.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

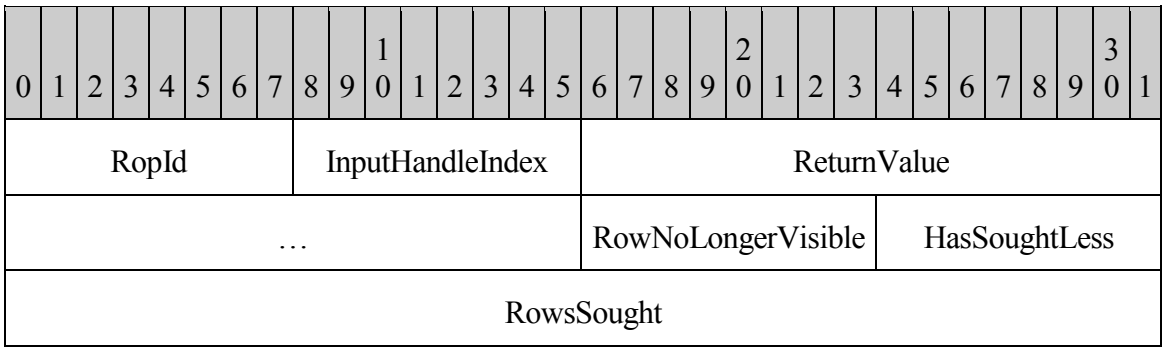
BookmarkSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Bookmark** field.

Bookmark (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **BookmarkSize**. This array specifies the origin for the seek operation.

RowCount (4 bytes): Signed 32-bit integer. This value specifies the direction and the number of rows to seek.

WantRowMovedCount (1 byte): 8-bit Boolean. This value specifies whether the server returns the actual number of rows sought in the response.

2.2.4.9.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x19.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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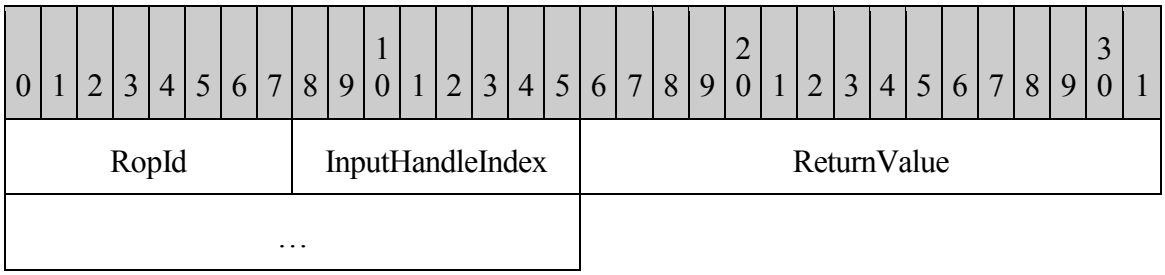
RowNoLongerVisible (1 byte): 8-bit Boolean. This value specifies whether the bookmark target is no longer visible.

HasSoughtLess (1 byte): 8-bit Boolean. This value specifies whether the full number of rows sought past was less than the number that was requested.

RowsSought (4 bytes): Signed 32-bit integer. This value specifies the direction and number of rows sought.

2.2.4.9.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x19.

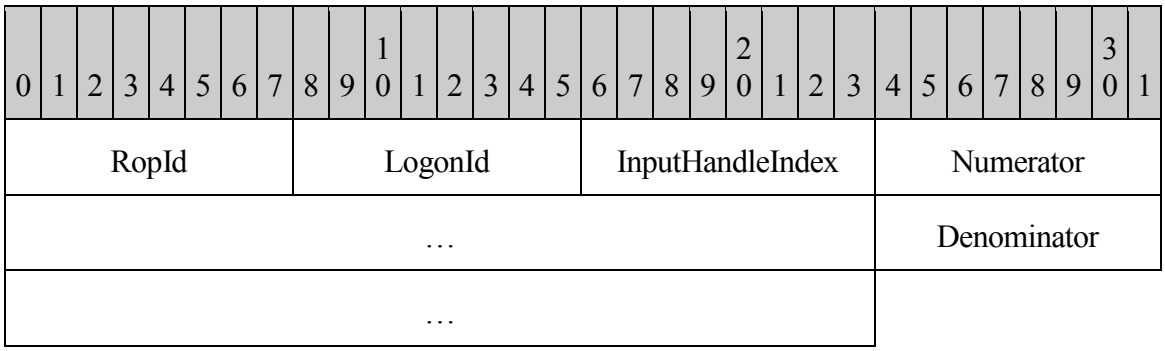
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.10 RopSeekRowFractional

This remote operation moves the cursor to an approximate position in a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.10.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1A.

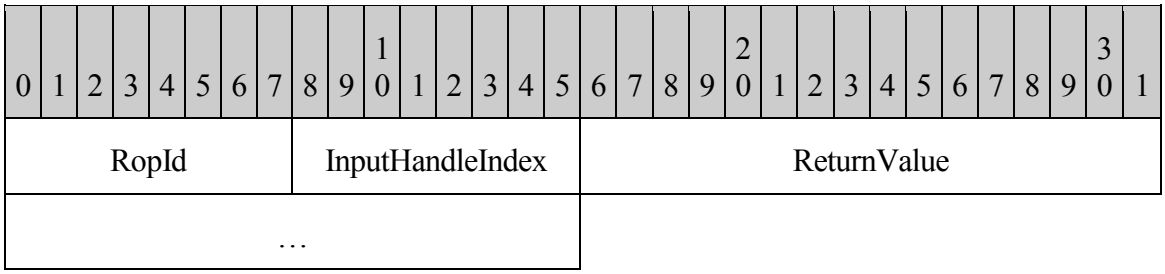
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Numerator (4 bytes): Unsigned 32-bit integer. This value represents the numerator of the fraction identifying the table position to seek to.

Denominator (4 bytes): Unsigned 32-bit integer. This value represents the denominator of the fraction identifying the table position to seek to.

2.2.4.10.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1A.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.4.11 RopCreateBookmark

This remote operation marks the current cursor position in a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.11.1 Request Buffer

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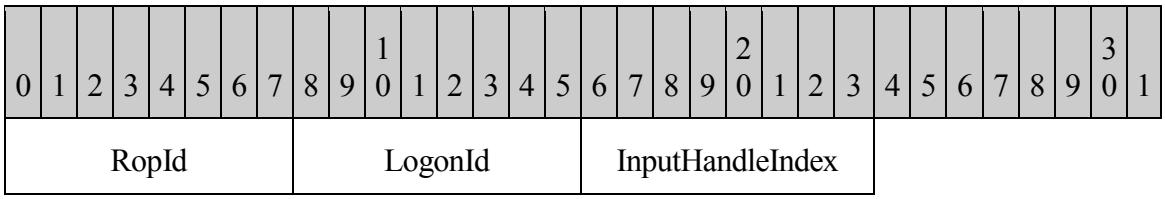
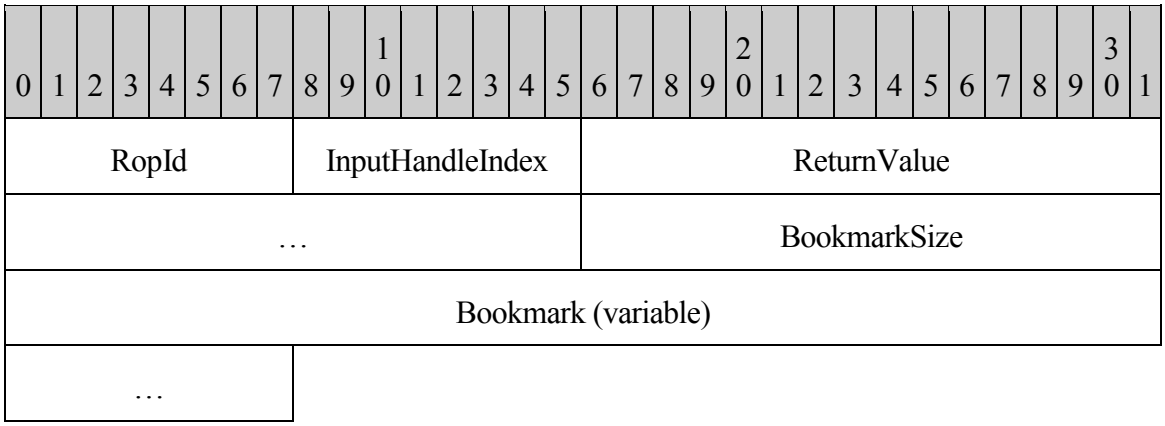


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1B.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.4.11.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1B.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

BookmarkSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Bookmark** field.

Bookmark (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **BookmarkSize**. This array specifies the bookmark created.

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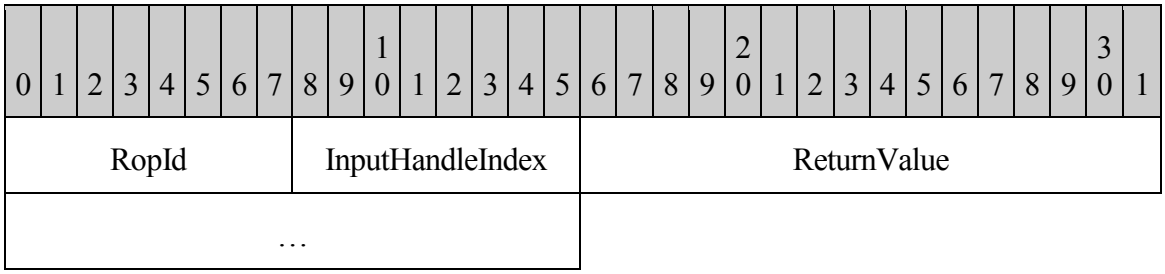
2.2.4.11.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1B.

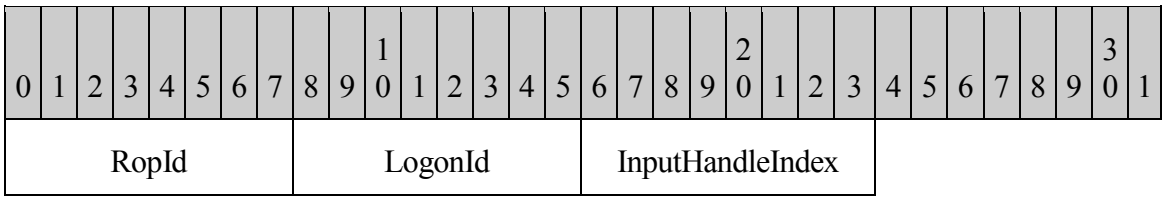
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.12 RopQueryColumnsAll

This remote operation gets a list of columns in a table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.12.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x37.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.4.12.2 Success Response Buffer

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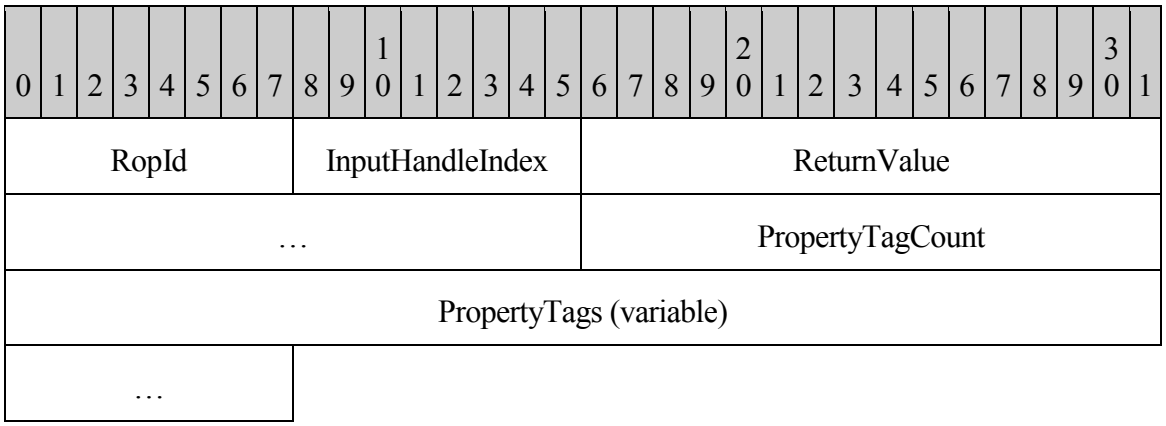


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x37.

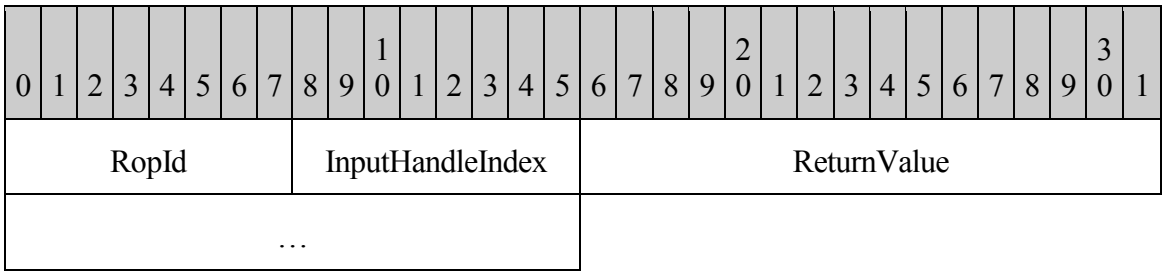
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies how many tags are present in **PropertyTags**.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain **PropertyTagCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the columns of the table.

2.2.4.12.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x37.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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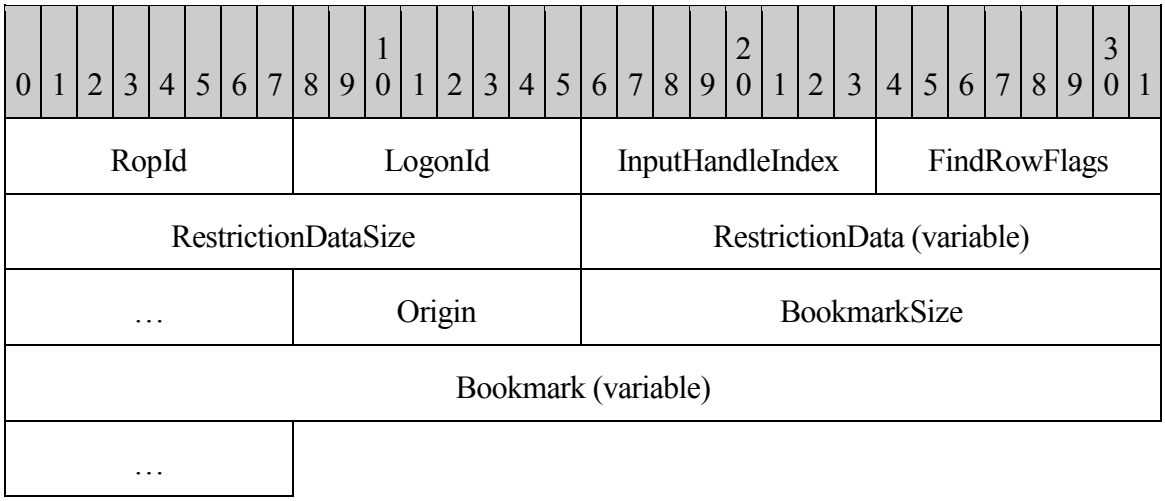
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.13 RopFindRow

This remote operation moves the cursor to a row in a table that matches specific search criteria. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.13.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4F.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

FindRowFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCTABL]. These flags control this operation.

RestrictionDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the length of the **RestrictionData** field.

RestrictionData (variable): Restriction. This field MUST be **RestrictionDataSize** bytes long. The format of this field is specified in [MS-OXCDATA]. This value specifies the filter for this operation.

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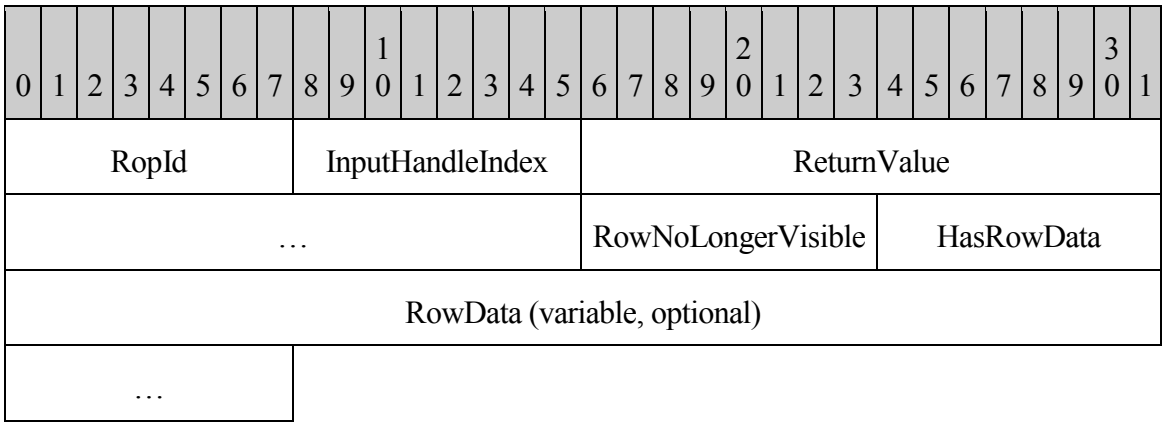
Origin (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCTABL]. This enumeration specifies where this operation begins its search.

BookmarkSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Bookmark** field.

Bookmark (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **BookmarkSize**. This array specifies the bookmark to use as the origin.

2.2.4.13.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4F.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RowNoLongerVisible (1 byte): 8-bit Boolean. This value specifies whether the bookmark target is no longer visible.

HasRowData (1 byte): 8-bit Boolean. This value indicates whether the **RowData** field is present.

RowData (variable, optional): PropertyRow structure. This field MUST be present if **IncludesRowData** is non-zero and MUST NOT be present if it is zero. The format of the **PropertyRow** structure is specified in [MS-OXCDATA] and the columns used for these rows were those previously set on this table by a **RopSetColumns**.

2.2.4.13.3 Failure Response Buffer

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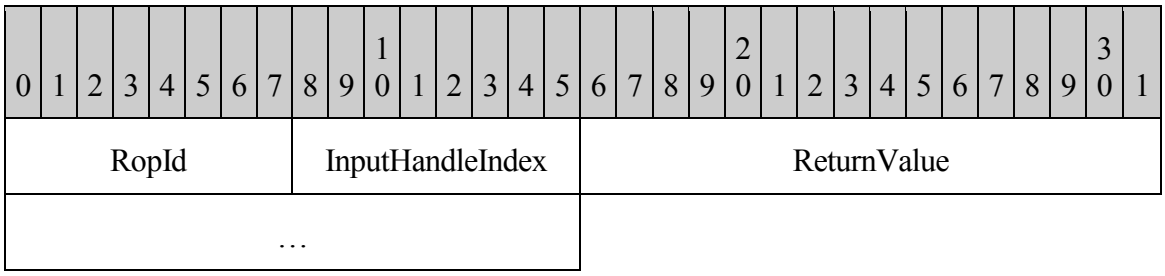


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4F.

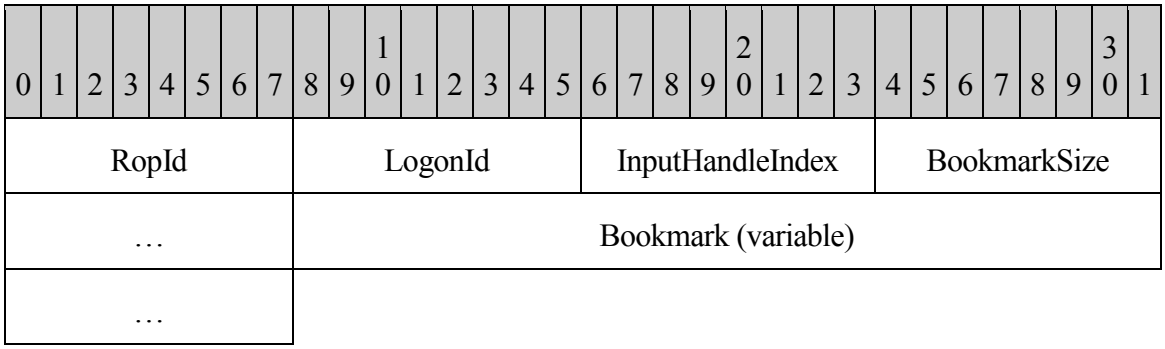
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.14 RopFreeBookmark

This remote operation releases a bookmark. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.14.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x89.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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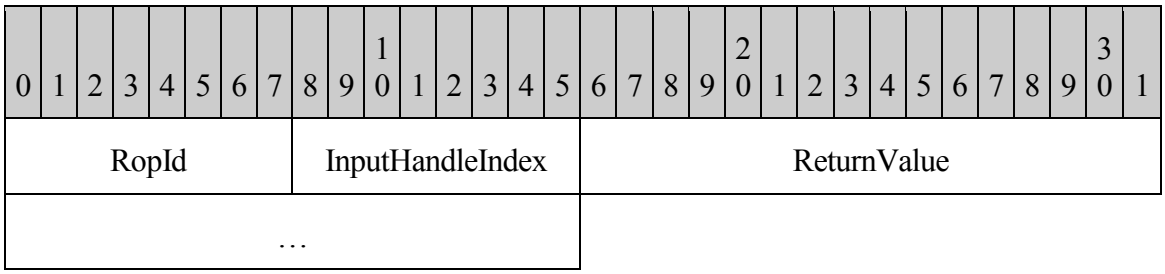
BookmarkSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Bookmark** field.

Bookmark (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **BookmarkSize**. This array specifies the bookmark to be freed.

2.2.4.14.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x89.

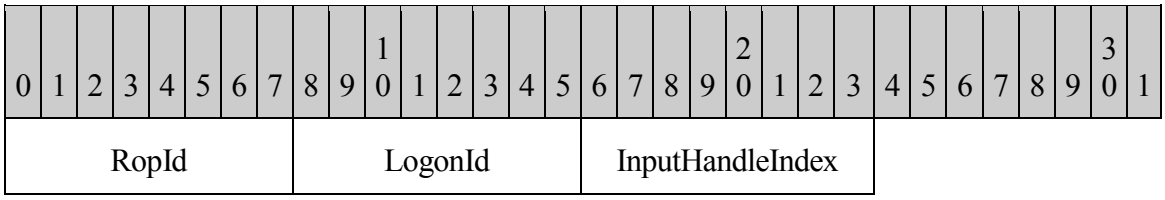
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.4.15 RopResetTable

This remote operation resets a table to its original state. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.15.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x81.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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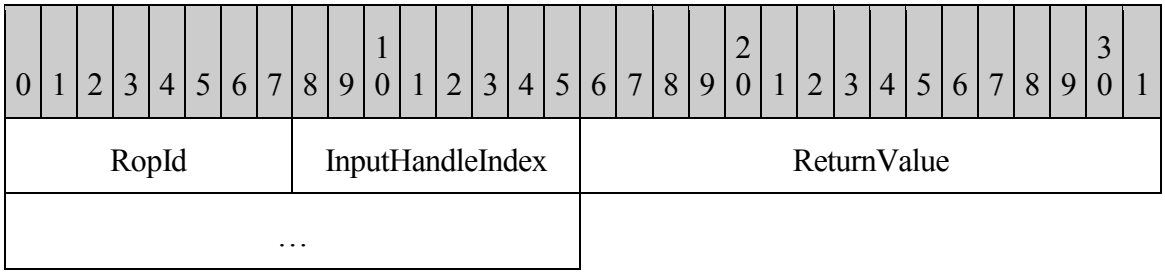
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.4.15.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x81.

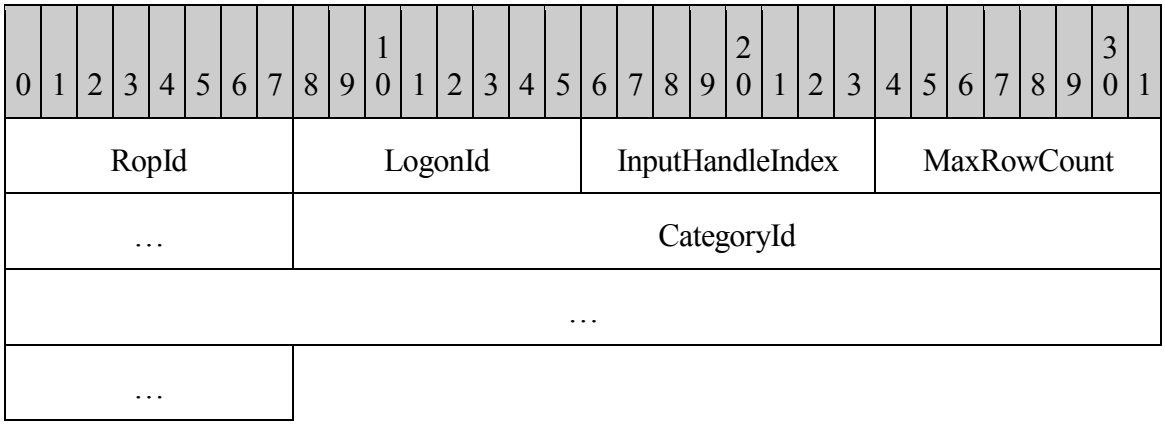
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.4.16 RopExpandRow

This remote operation expands a categorized row. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.16.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x59.

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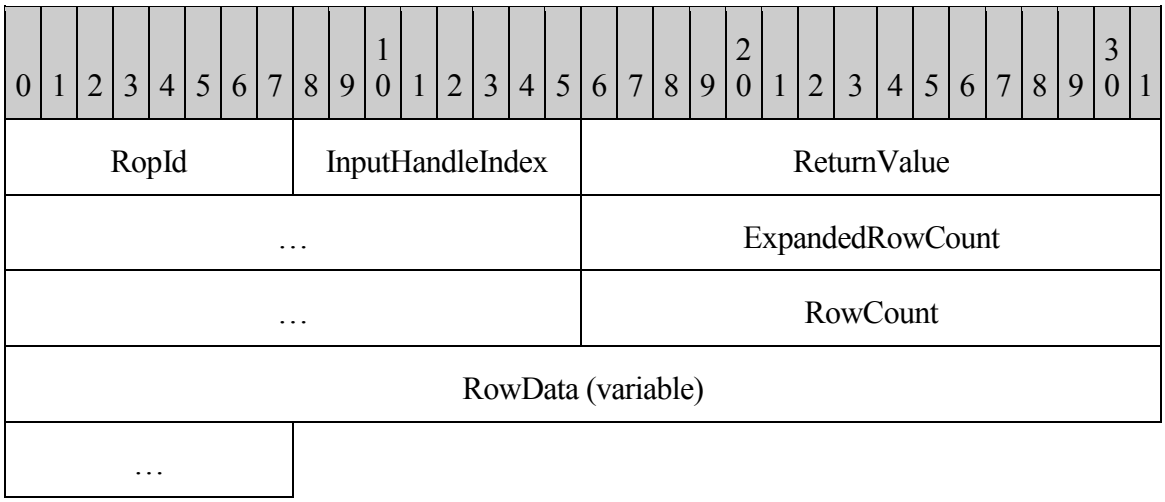
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

MaxRowCount (2 bytes): Unsigned 16-bit integer. This value specifies the maximum number of expanded rows to return data for.

CategoryId (8 bytes): 64-bit identifier. This identifier specifies the category to be expanded.

2.2.4.16.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x59.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

ExpandedRowCount (4 bytes): Unsigned 32-bit integer. This value specifies the total number of rows available in the expanded category.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures present in the **RowData** field.

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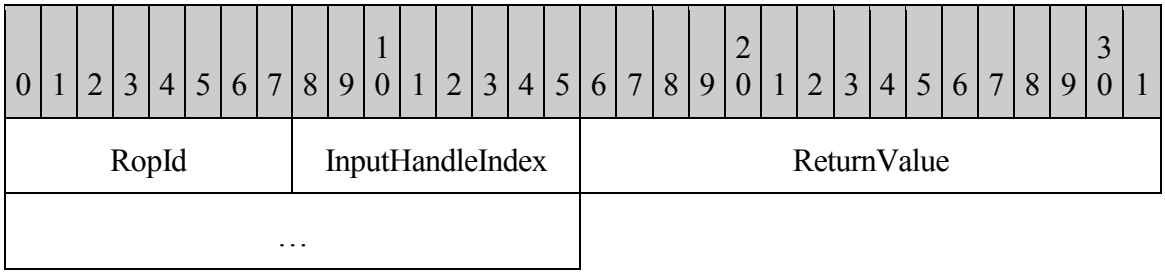
RowData (variable): List of **PropertyRow** structures. This field MUST contain the same number of structures as specified in **RowCount**. The format of the **PropertyRow** structure is specified in [MS-OXCDATA] and the columns used for these rows were those previously set on this table by a **RopSetColumns**.

2.2.4.16.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x59.

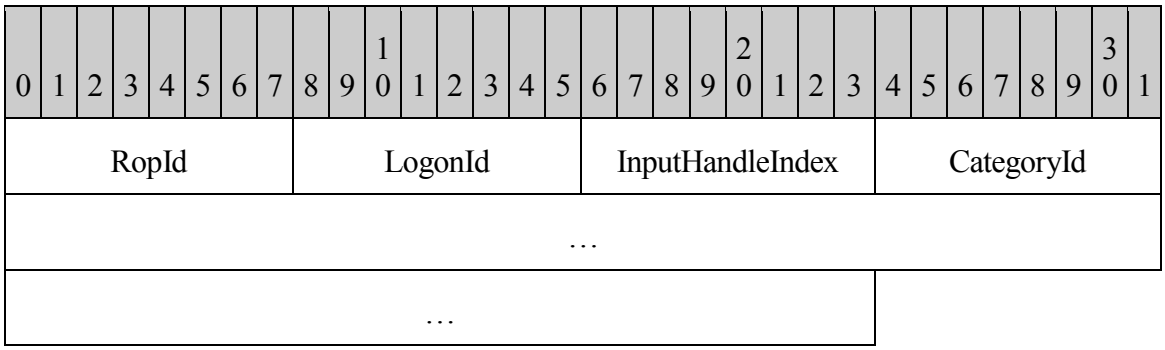
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.17 RopCollapseRow

This remote operation collapses a categorized row. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.17.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5A.

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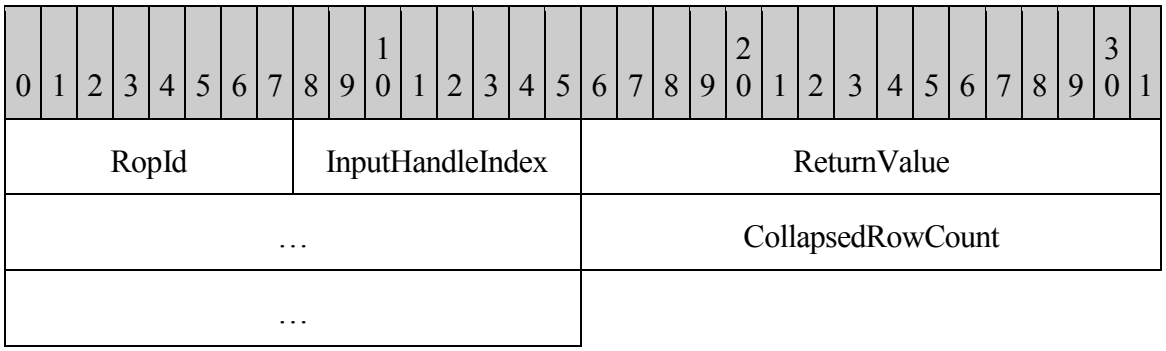
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

CategoryId (8 bytes): 64-bit identifier. This identifier specifies the category to be collapsed.

2.2.4.17.2 Success Response Buffer



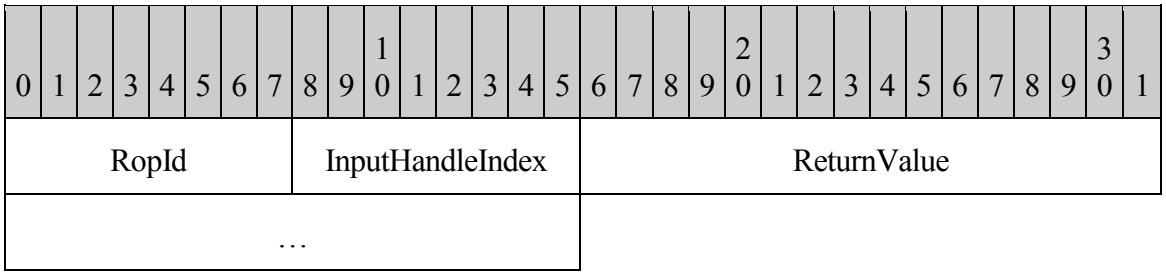
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5A.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

CollapsedRowCount (4 bytes): Unsigned 32-bit integer. This value specifies the total number of rows in the collapsed category.

2.2.4.17.3 Failure Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5A.

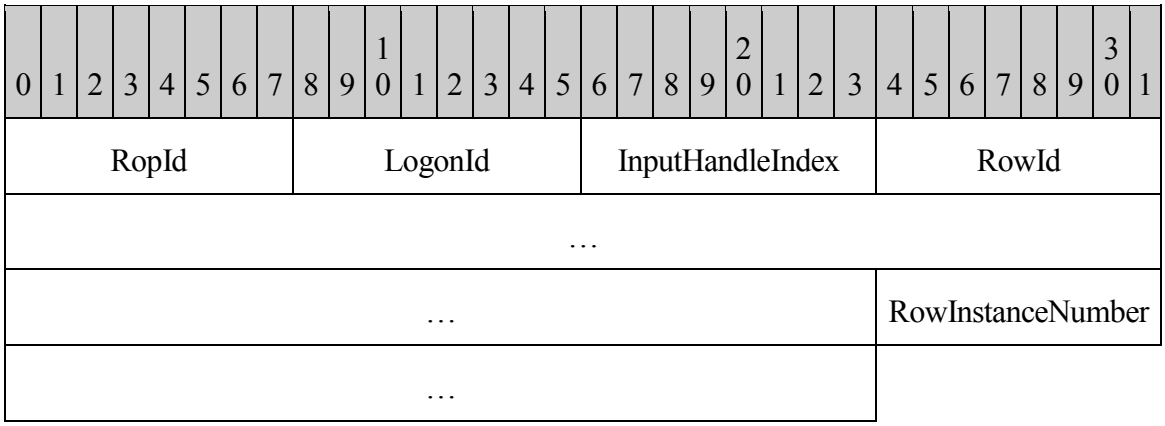
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.18 RopGetCollapseState

This remote operation gets the current collapse state of rows in a categorized table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.18.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6B.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

RowId (8 bytes): 64-bit identifier. This identifier specifies the row position to save in the CollapseState.

RowInstanceNumber (4 bytes): Unsigned 32-bit integer. This value specifies the instance number of the row position to save in the CollapseState.

2.2.4.18.2 Success Response Buffer

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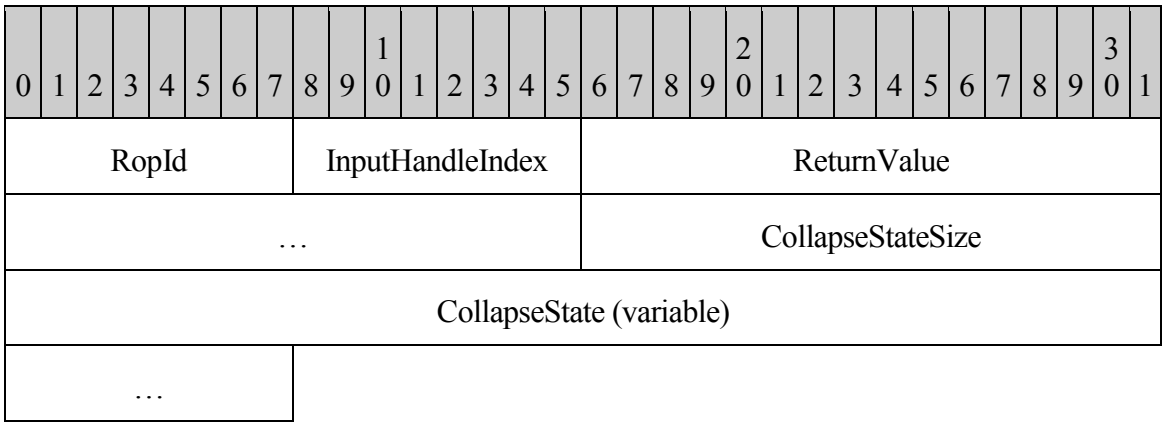


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6B.

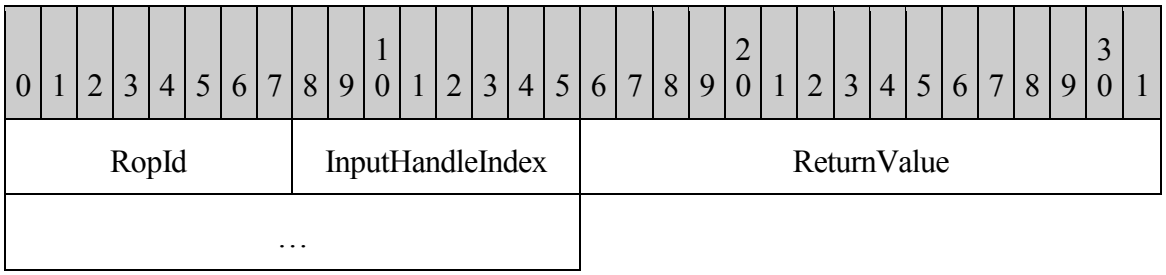
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

CollapseStateSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **CollapseState** field.

CollapseState (variable): Array of bytes. This field MUST contain the same number of bytes as specified in the **CollapseStateSize** field. This array specifies a collapse state for a categorized table.

2.2.4.18.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6B.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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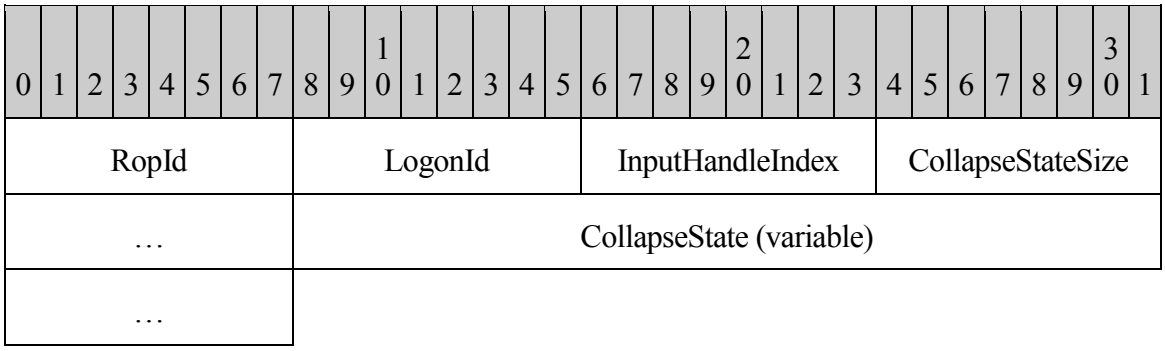
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.4.19 RopSetCollapseState

This remote operation restores the collapse state of rows in a categorized table. More detailed information about this operation can be found in [MS-OXCTABL].

2.2.4.19.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6C.

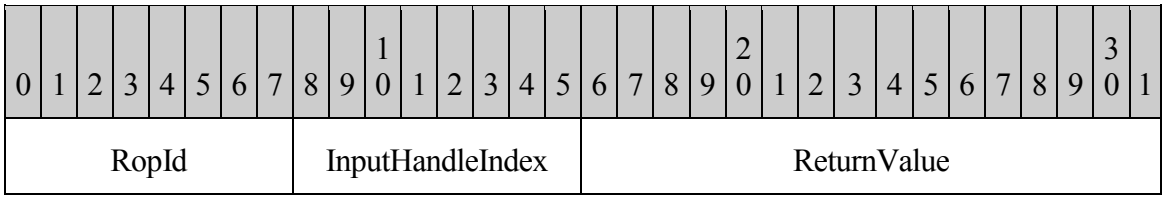
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

CollapseStateSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **CollapseState** field.

CollapseState (variable): Array of bytes. This field MUST contain the same number of bytes as specified in the **CollapseStateSize** field. This array specifies a collapse state for a categorized table.

2.2.4.19.2 Success Response Buffer



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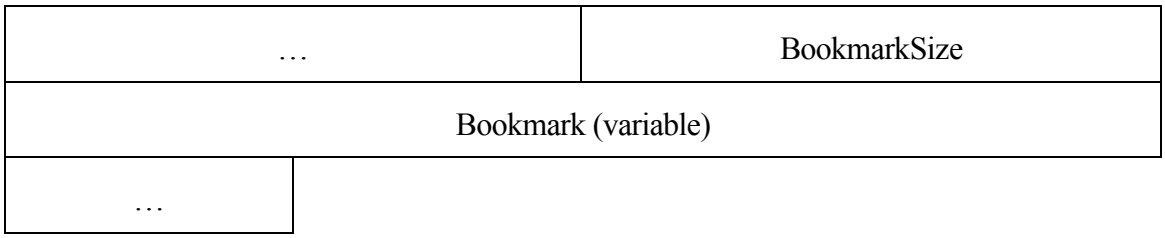


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6C.

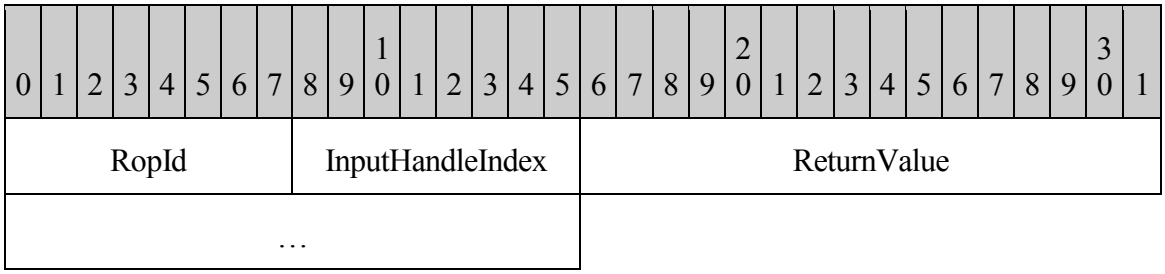
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

BookmarkSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Bookmark** field.

Bookmark (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **BookmarkSize**. This array specifies the current cursor position.

2.2.4.19.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6C.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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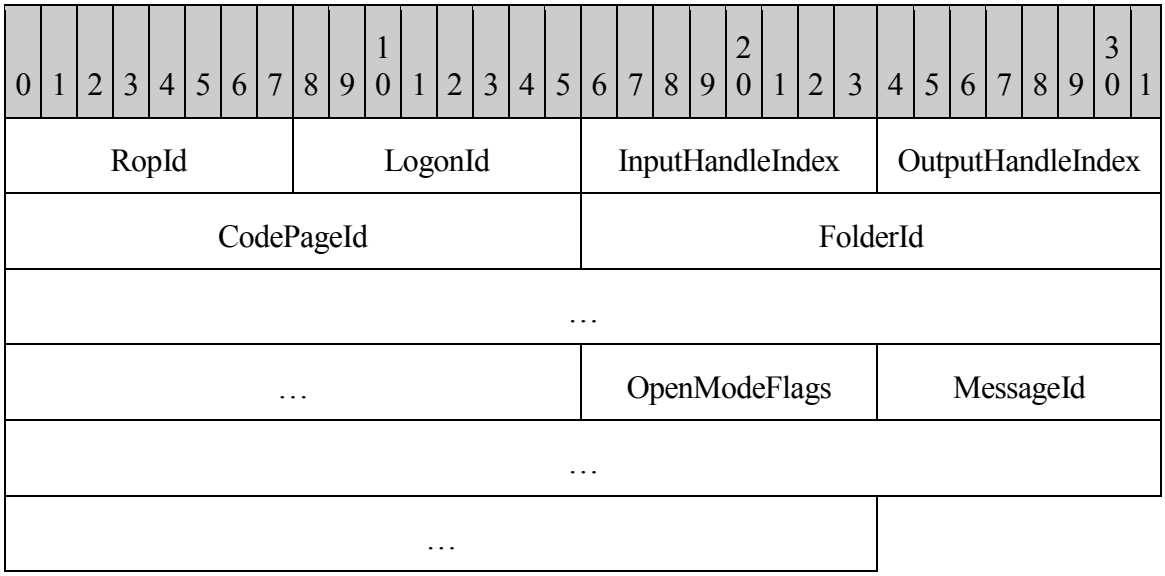
2.2.5 Message ROPs

2.2.5.1 RopOpenMessage

This remote operation opens an existing message in a mailbox. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x03.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

CodePageId (2 bytes): 16-bit identifier. This value specifies which code page will be used for string values associated with the message.

FolderId (8 bytes): 64-bit identifier. This value identifies the parent folder of the message to be opened.

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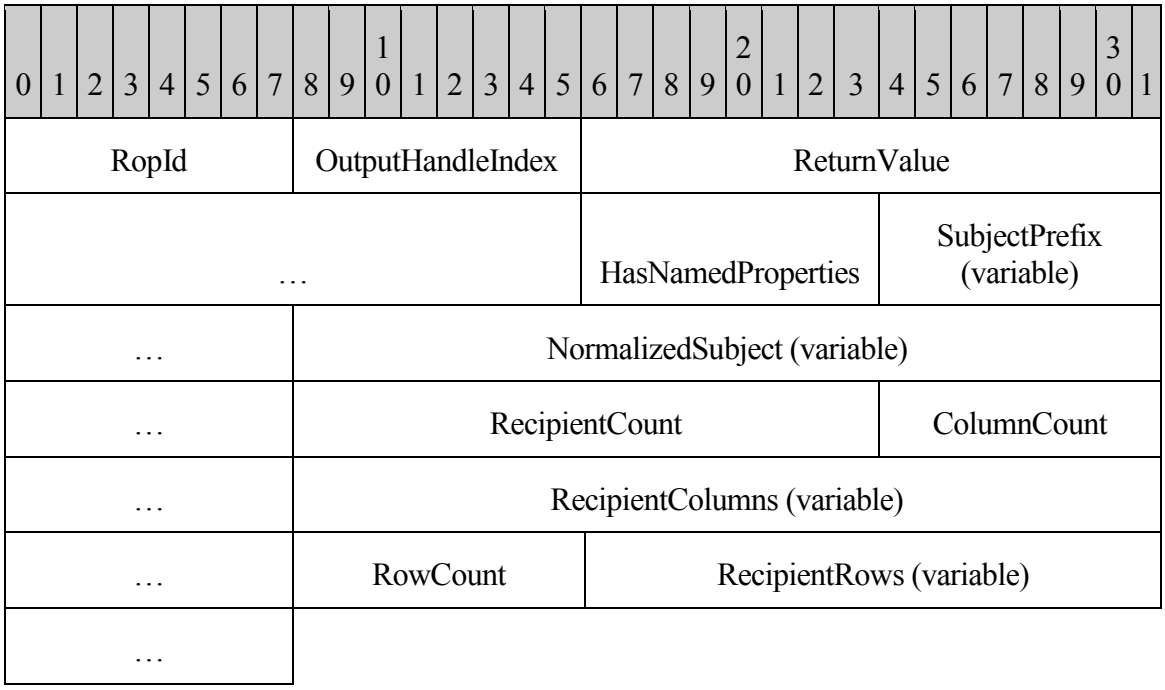
OpenModeFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCMSG]. These flags control the access to the message.

MessageId (8 bytes): 64-bit identifier. This value identifies the message to be opened.

2.2.5.1.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x03.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

HasNamedProperties (1 byte): 8-bit Boolean. This value specifies whether the message has named properties.

SubjectPrefix (variable): TypedString structure. The format of the **TypedString** structure is specified in [MS-OXCDATA]. This structure specifies the subject prefix of the message.

NormalizedSubject (variable): TypedString structure. The format of the **TypedString** structure is specified in [MS-OXCDATA]. This structure specifies the normalized subject of the message.

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RecipientCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of recipients on the message.

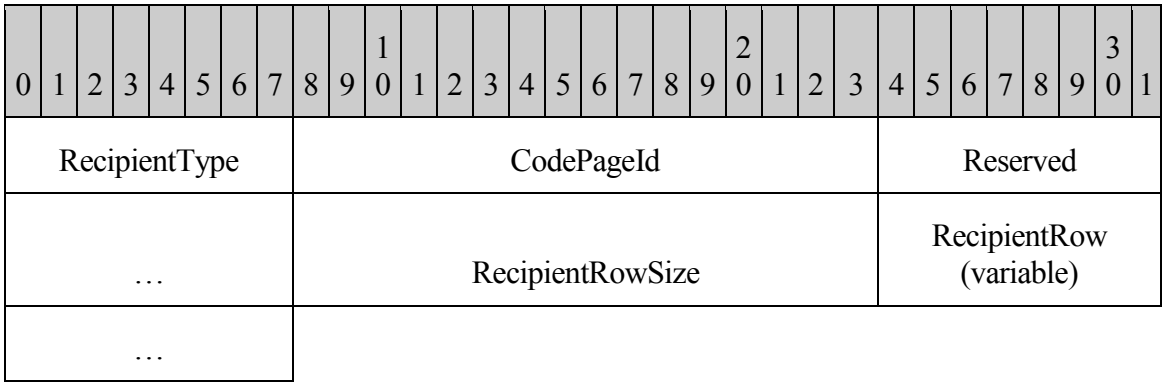
ColumnCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **RecipientColumns** field.

RecipientColumns (variable): Array of **PropertyTag** structures. This field MUST contain **ColumnCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values that can be included in each row that is specified in the **RecipientRows** field.

RowCount (1 bytes): Unsigned 8-bit integer. This value specifies the number of rows in the **RecipientRows** field.

RecipientRows (variable): List of **OpenRecipientRow** structures. This array MUST contain the same number of structures as specified in the **RowCount** field. The format of the **OpenRecipientRow** structure is defined in section 2.2.5.1.2.1:

2.2.5.1.2.1 OpenRecipientRow structure



RecipientType (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCMSG]. This enumeration specifies the type of recipient.

CodePageId (2 bytes): 16-bit enumeration. This value specifies the code page for the recipient.

Reserved (2 bytes): Reserved. The server MUST specify 0x0000 for this value.

RecipientRowSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **RecipientRow** field.

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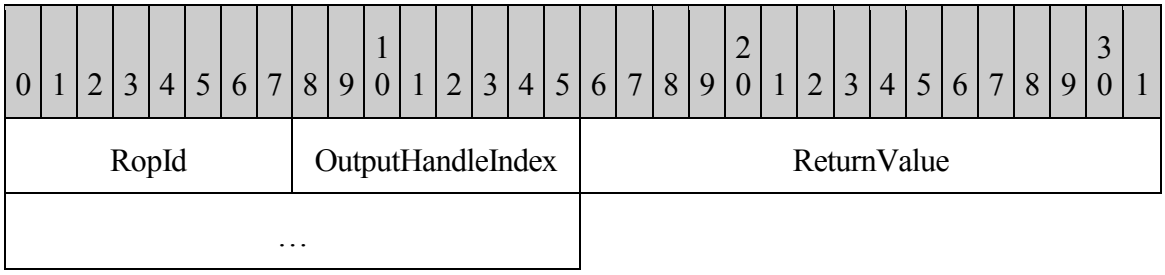
RecipientRow (variable): RecipientRow structure. The format of this structure is specified in [MS-OXCDATA]. The size of this field MUST be the same number of bytes as specified in the **RecipientRowSize** field.

2.2.5.1.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x03.

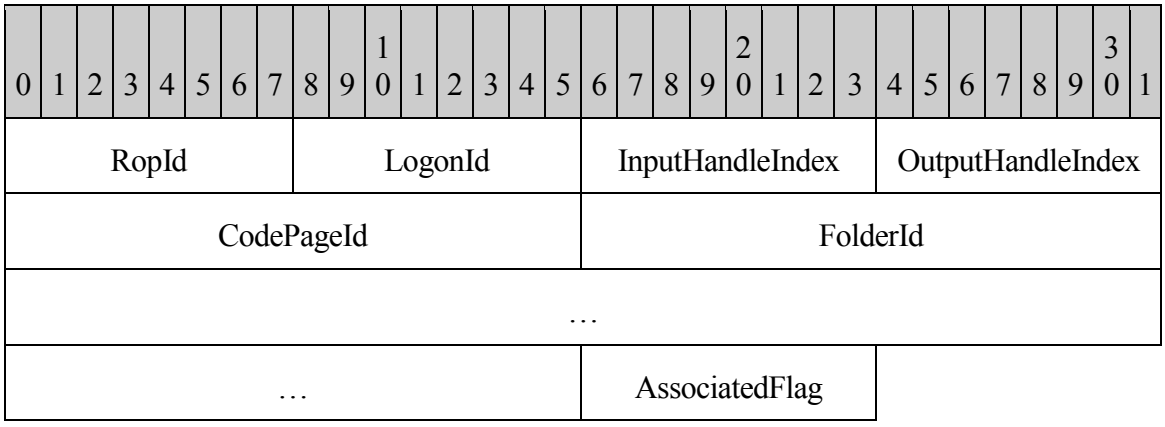
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.2 RopCreateMessage

This remote operation creates a message object in a mailbox. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x06.

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LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

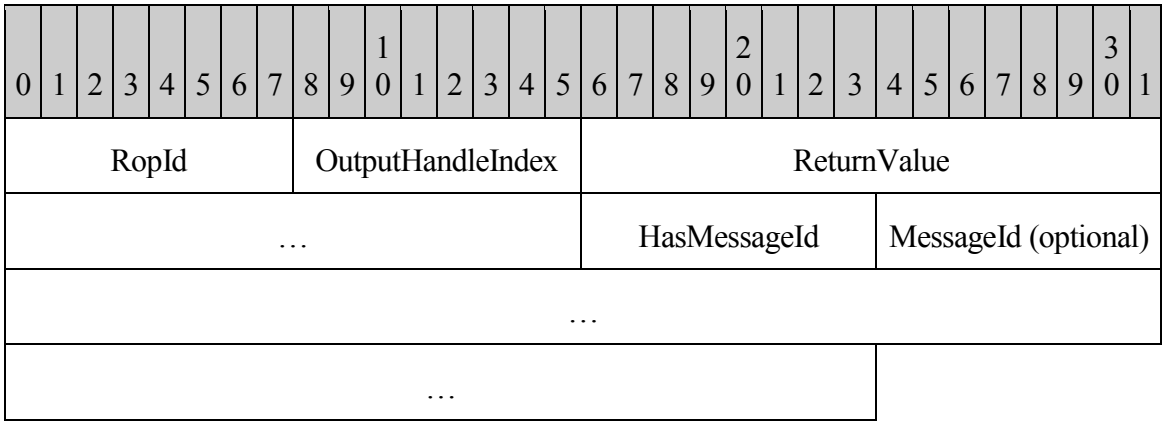
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

CodePageId (2 bytes): Unsigned 16-bit integer. This value specifies the code page for the message.

FolderId (8 bytes): 64-bit identifier. This value identifies the parent folder.

AssociatedFlag (1 byte): 8-bit Boolean. This value specifies whether the message is a Folder Associated Information message.

2.2.5.2.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x06.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

HasMessageId (1 byte): 8-bit Boolean. This value specifies whether the **MessageId** field is present.

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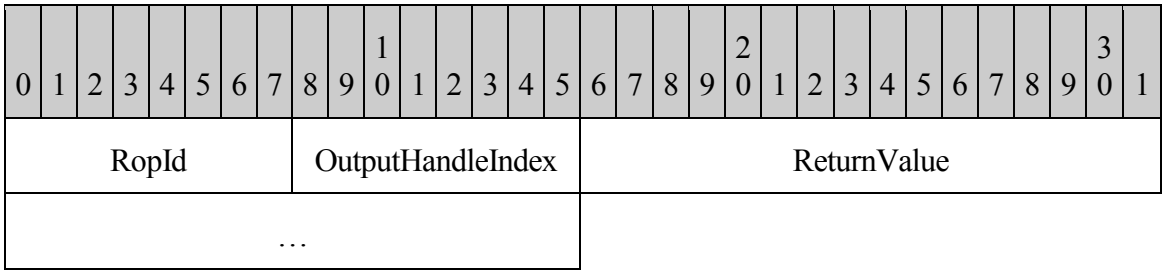
MessageId (8 bytes, optional): 64-bit identifier. This field MUST be present if **HasMessageId** is non-zero and MUST NOT be present if it is zero. This value is an identifier that is associated with the created message.

2.2.5.2.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x06.

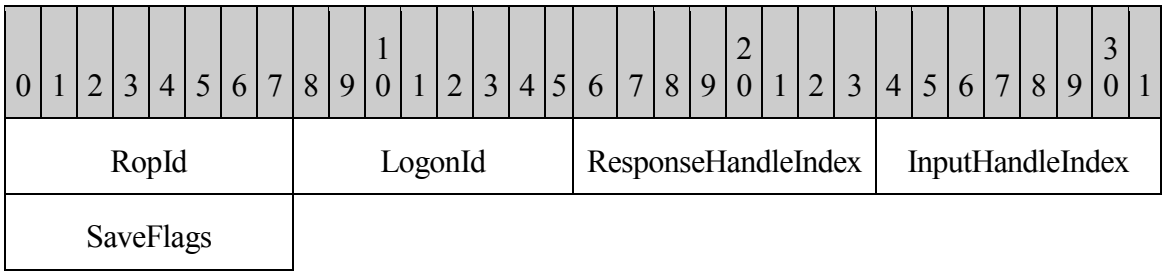
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.3 RopSaveChangesMessage

This remote operation commits the changes made to a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.3.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0C.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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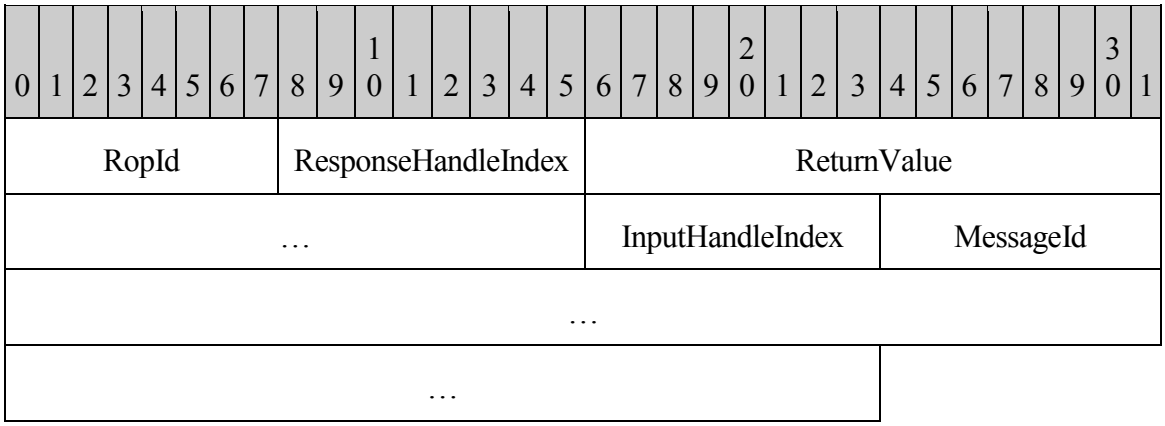
ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table that is referenced in the response. More information about Server Objects can be found in section 3.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

SaveFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCMSG]. These flags specify how the save operation behaves.

2.2.5.3.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0C.

ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **ResponseHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

MessageId (8 bytes): 64-bit identifier. This value specifies the ID of the message saved.

2.2.5.3.3 Failure Response Buffer

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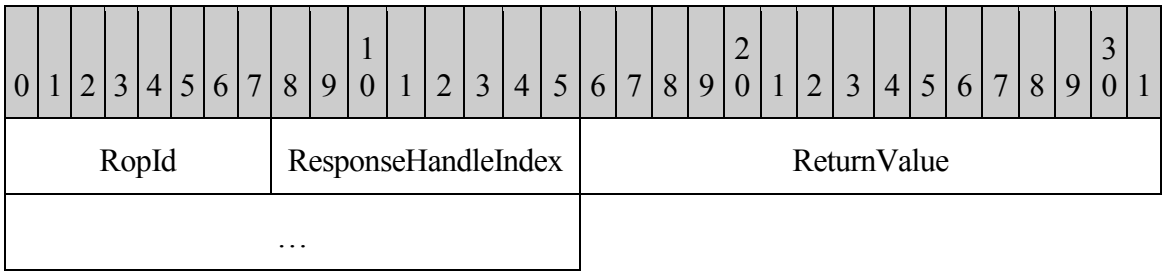


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0C.

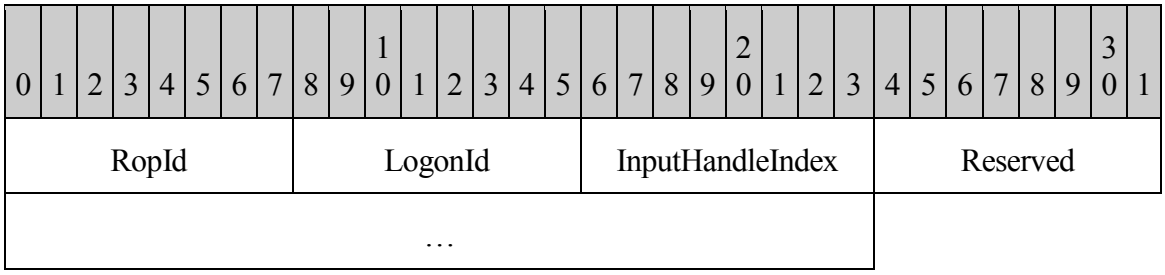
ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **ResponseHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.4 RopRemoveAllRecipients

This remote operation deletes all recipients from a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.4.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0D.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Reserved (4 bytes): Reserved. The client MUST specify this value as 0x00000000.

2.2.5.4.2 Response Buffer

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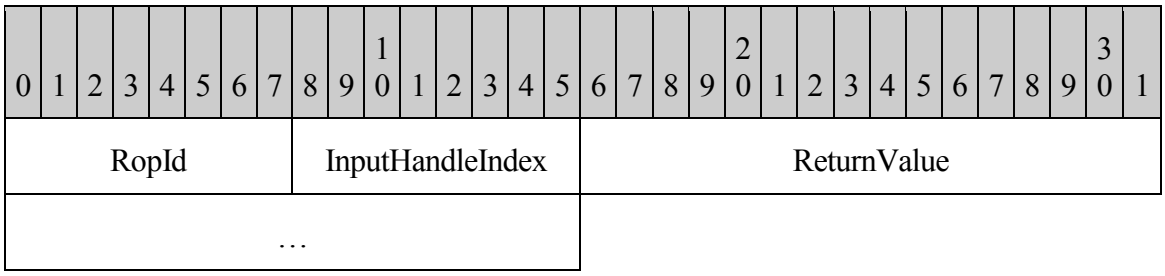


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0D.

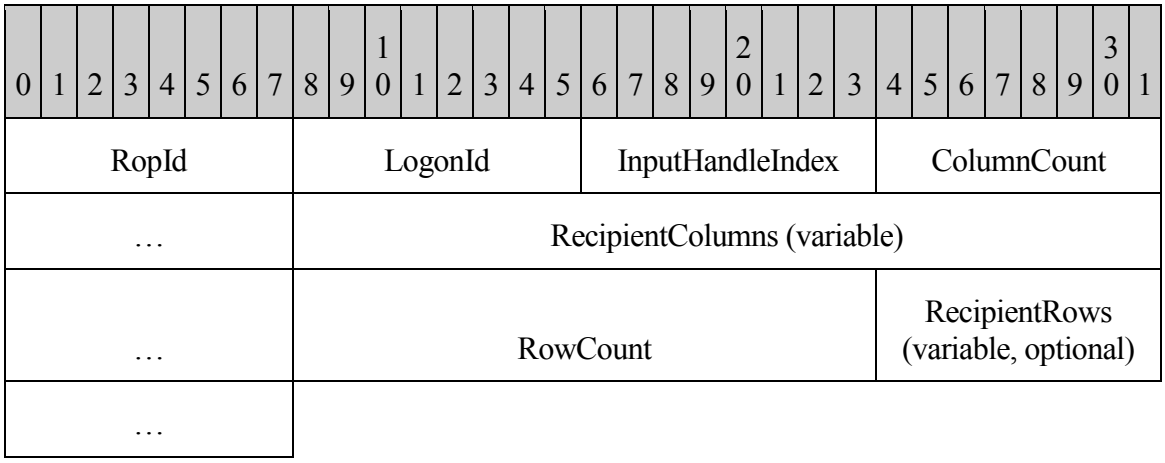
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.5.5 RopModifyRecipients

This remote operation adds or modifies recipients on a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.5.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0E.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

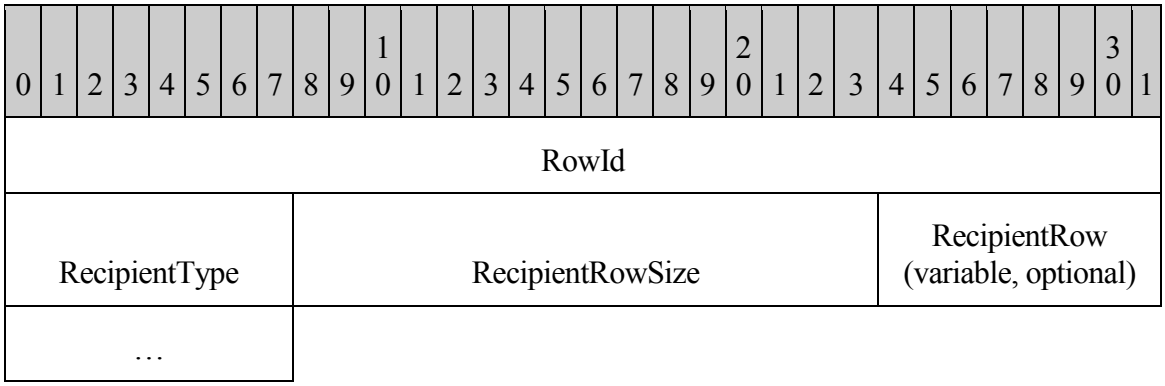
ColumnCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **RecipientColumns** field.

RecipientColumns (variable): Array of **PropertyTag** structures. This field MUST contain **ColumnCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values that can be included for each recipient row.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of rows in the **RecipientRows** field.

RecipientRows (variable): List of **ModifyRecipientRow** structures. This array MUST contain the same number of structures as specified in the **RowCount** field. The format of **ModifyRecipientRow** is defined in section 2.2.5.5.1.1:

2.2.5.5.1.1 ModifyRecipientRow



RowId (4 bytes): Unsigned 32-bit integer. This value specifies the ID of the recipient row.

RecipientType (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCMSG]. This enumeration specifies the type of recipient.

RecipientRowSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **RecipientRow** field.

RecipientRow (variable, optional): RecipientRow structure. This field MUST be present when the **RecipientRowSize** field is non-zero and MUST NOT be present otherwise. The format of the **RecipientRow** structure is specified in [MS-OXCDATA]. The size of this field MUST be the same number of bytes as specified in the **RecipientRowSize** field.

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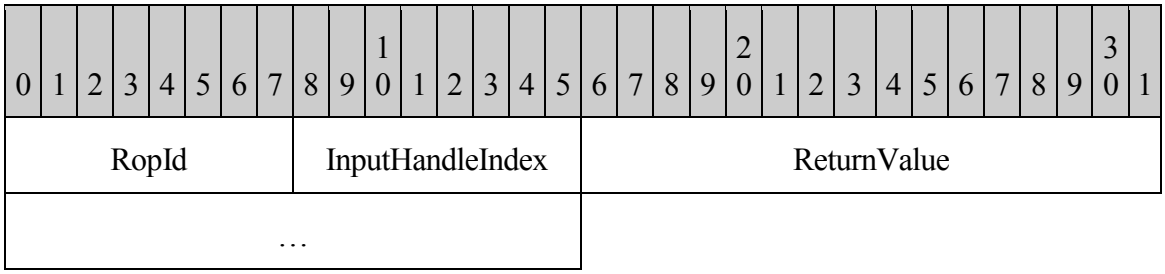
2.2.5.5.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0E.

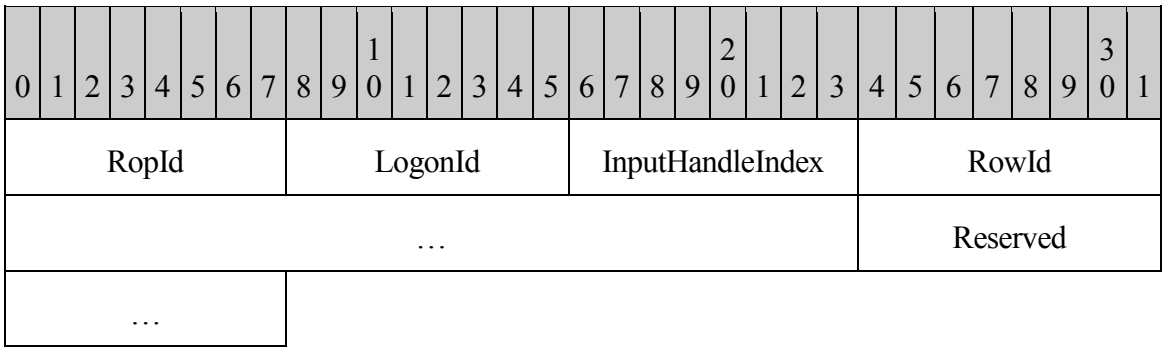
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.5.6 RopReadRecipients

This remote operation gets recipient details from a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.6.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0F.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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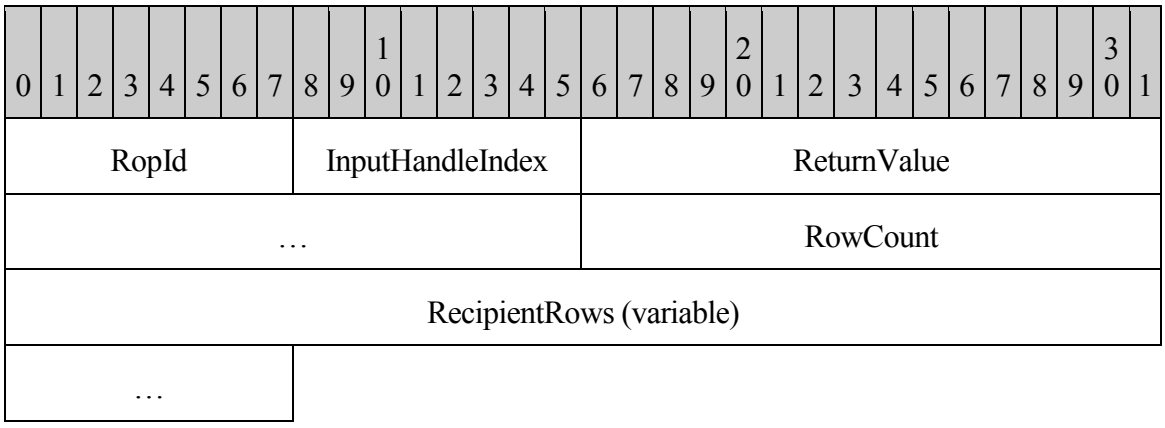
RowId (4 bytes): Unsigned 32-bit integer. This value specifies the recipient to start reading.

Reserved (2 bytes): Reserved. This value MUST be set to 0x0000. Server behavior is undefined if this is not set to otherwise.

2.2.5.6.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0F.

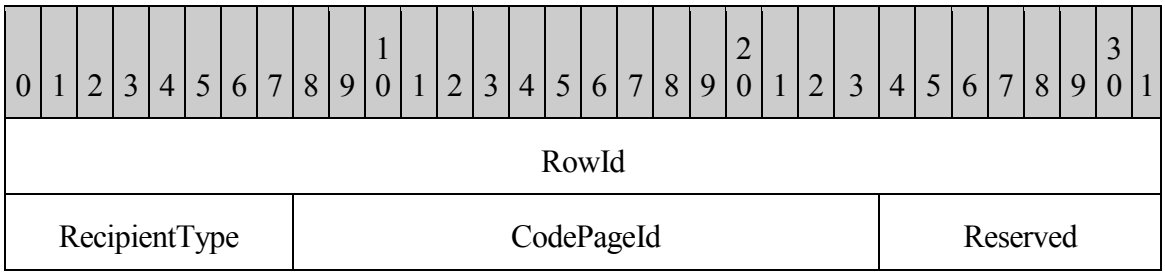
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of rows in the **RecipientRows** field.

RecipientRows (variable): List of **ReadRecipientRow** structures. This array MUST contain the same number of structures as specified in the **RowCount** field. The format of the **ReadRecipientRow** structure is defined in section 2.2.5.6.2.1:

2.2.5.6.2.1 ReadRecipientRow structure



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	RecipientRowSize	RecipientRow (variable)
…		

RowId (4 bytes): Unsigned 32-bit integer. This value specifies the ID of the recipient row.

RecipientType (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCMSG]. This enumeration specifies the type of recipient.

CodePageId (2 bytes): 16-bit enumeration. This value specifies the code page for the recipient.

Reserved (2 bytes): Reserved. The server MUST specify 0x0000 for this value.

RecipientRowSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **RecipientRow** field.

RecipientRow (variable): RecipientRow structure. The format of this structure is specified in [MS-OXCDATA]. The size of this field MUST be the same number of bytes as specified in the **RecipientRowSize** field.

2.2.5.6.3 Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0F.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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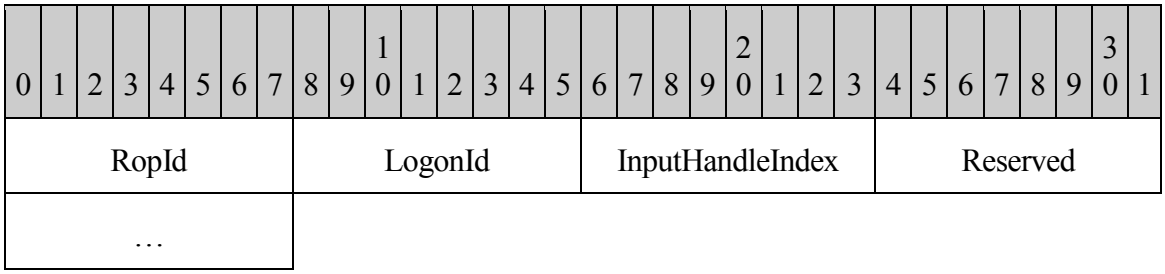
2.2.5.7 RopReloadCachedInformation

This remote operation gets message and recipient information from a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.7.1 Request Buffer



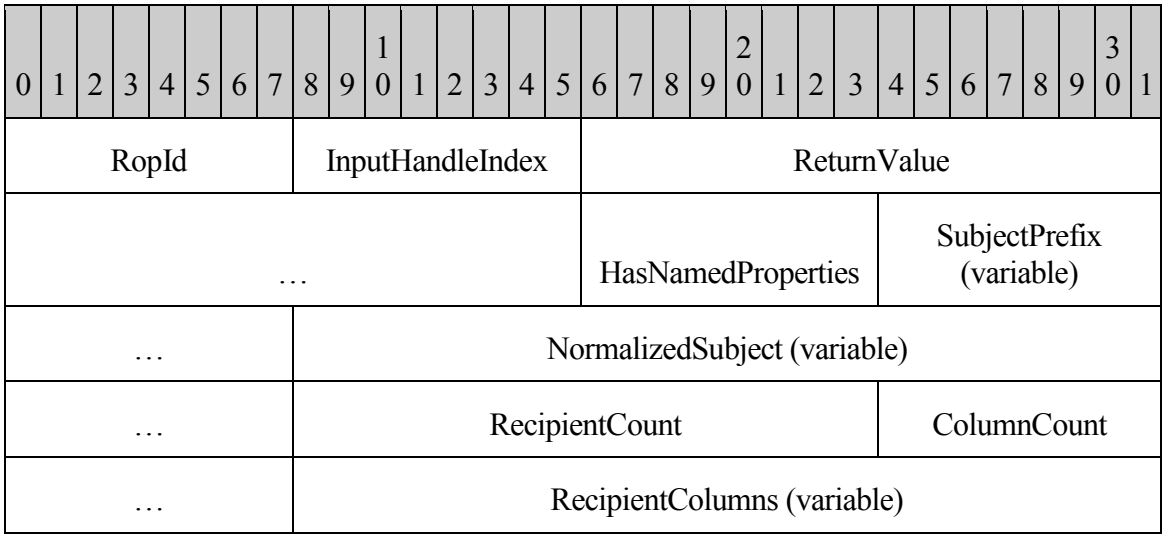
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x10.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Reserved (2 bytes): Reserved. This value MUST be set to 0x0000. Server behavior is undefined if this is not set to otherwise.

2.2.5.7.2 Success Response Buffer



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…	RowCount	RecipientRows (variable)
…		

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x10.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

HasNamedProperties (1 byte): 8-bit Boolean. This value specifies whether the message has named properties.

SubjectPrefix (variable): TypedString structure. The format of the **TypedString** structure is specified in [MS-OXCDATA]. This value specifies the subject prefix of the message.

NormalizedSubject (variable): TypedString structure. The format of the **TypedString** structure is specified in [MS-OXCDATA]. This value specifies the normalized subject of the message.

RecipientCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of recipients on the message.

ColumnCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **RecipientColumns** field.

RecipientColumns (variable): Array of **PropertyTag** structures. This field MUST contain **ColumnCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values that can be included for each recipient row.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of rows in the **RecipientRows** field.

RecipientRows (variable): List of **OpenRecipientRow** structures. This array MUST contain the same number of structures as specified in the **RowCount** field. The format of the **OpenRecipientRow** structure is defined in section 2.2.5.1.2.1.

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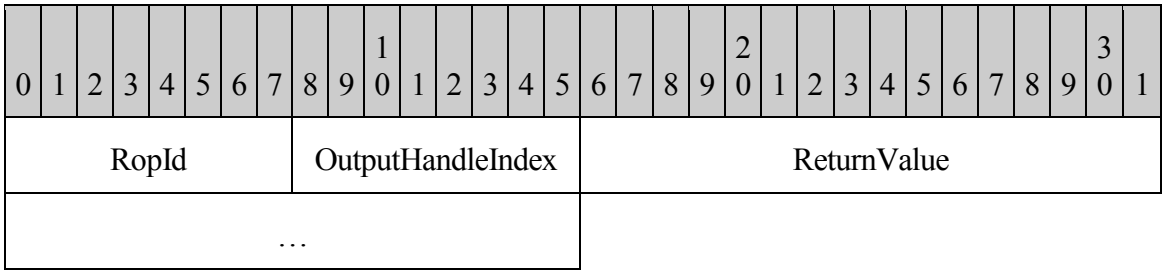
2.2.5.7.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x10.

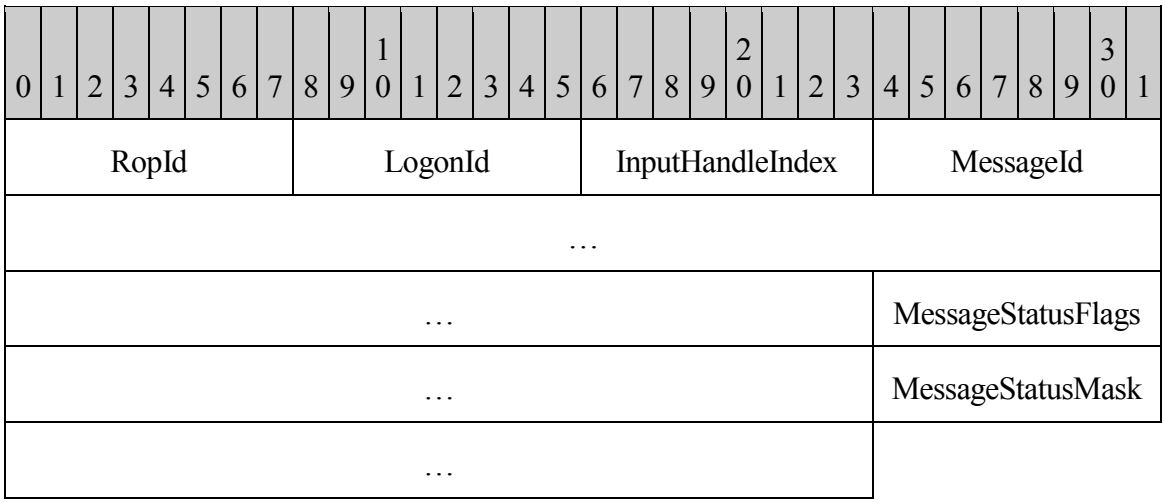
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.8 RopSetMessageStatus

This remote operation sets the status of a message in a folder. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.8.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x20.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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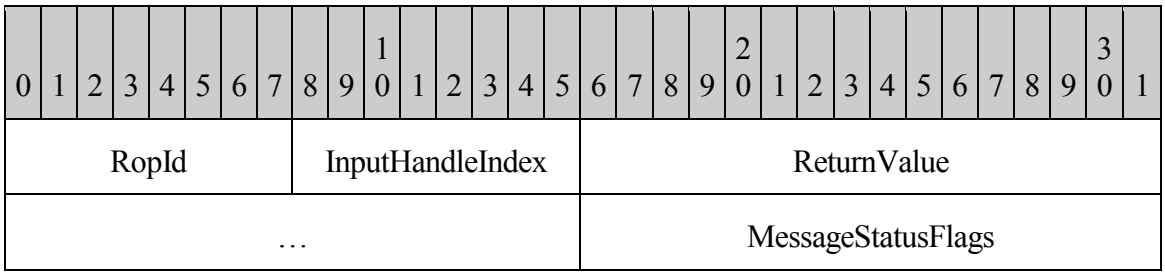
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

MessageId (8 bytes): Unsigned 64-bit integer. This value identifies the message for which the status will be changed.

MessageStatusFlags (4 bytes): 32-bit flags structure. This field contains status flags to set on the message. The possible values are specified in [MS-OXCMSG].

MessageStatusMask (4 bytes): 32-bit bitmask. This bitmask specifies which bits in the **MessageStatusFlags** field are to be changed.

2.2.5.8.2 Success Response Buffer



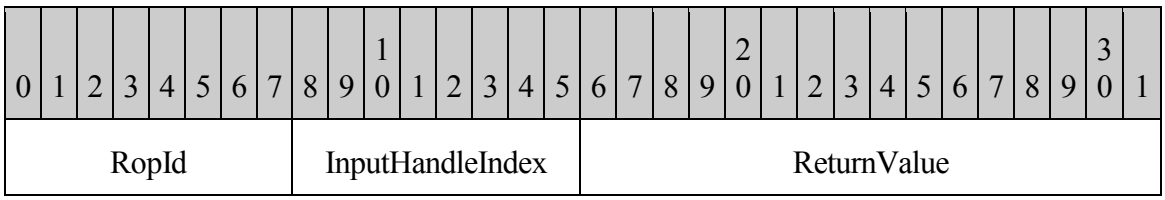
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x20.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

MessageStatusFlags (4 bytes): 32-bit flags structure. This field contains the status flags that were set on the message before this operation. The possible values are specified in [MS-OXCMSG].

2.2.5.8.3 Failure Response Buffer



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…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x20.

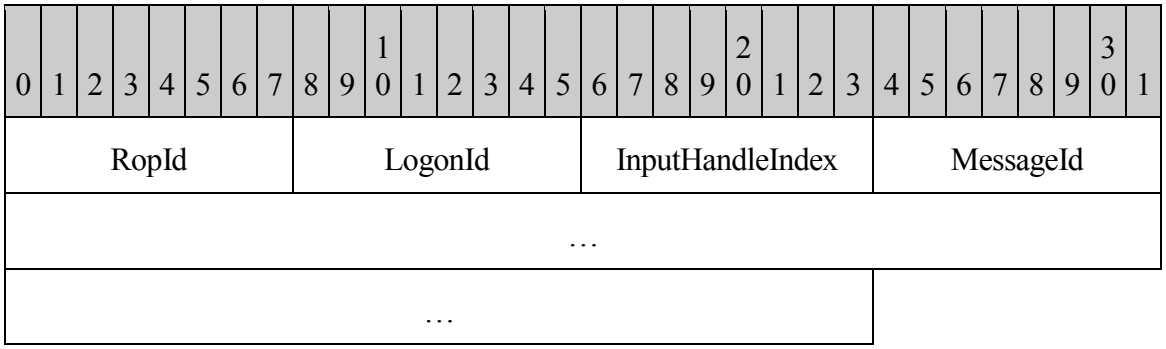
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.9 RopGetMessageStatus

This remote operation returns the status of a message in a folder. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.9.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x1F.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

MessageId (8 bytes): Unsigned 64-bit integer. This value identifies the message for which the status will be returned.

2.2.5.9.2 Success Response Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																MessageStatusFlags															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x20. **Note:** The **RopId** of the response for this ROP response buffer does not match the **RopId** of the ROP request buffer.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the handle in the Server Object Handle Table used as input for this operation. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

MessageStatusFlags (4 bytes): 32-bit flags structure. This field contains status flags set on the message. The possible values are specified in [MS-OXCMSG].

2.2.5.9.3 Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x20. **Note:** The **RopId** of the response for this ROP response buffer does not match the **RopId** of the ROP request buffer.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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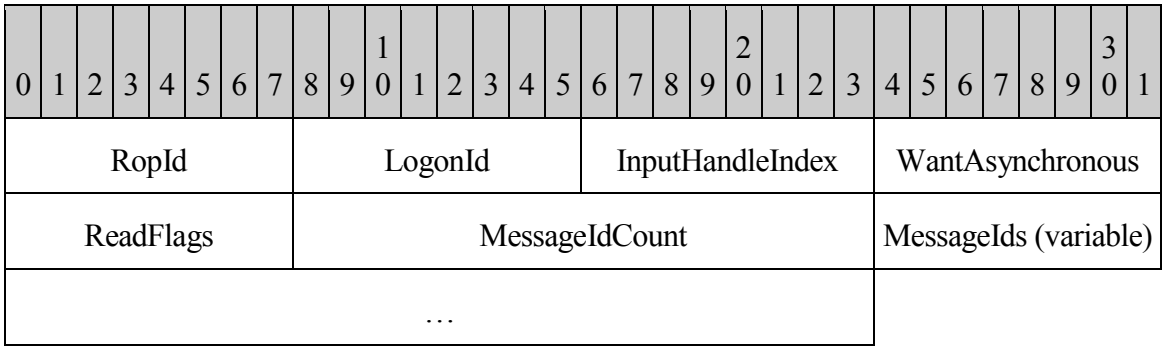
2.2.5.10 RopSetReadFlags

This remote operation sets the read flag for messages in a folder. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.10.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x66.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

ReadFlags (1 byte): 8-bit flags structure. The possible values for these flags are specified in [MS-OXCMSG]. These flags specify the flags to set.

MessageIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of identifiers in the **MessageIds** field.

MessageIds (variable): Array of 64-bit identifiers. This field MUST contain the same number of identifiers as specified in the **MessageIdCount** field. These IDs specify the messages that are to have their read flags changed.

2.2.5.10.2 Response Buffer

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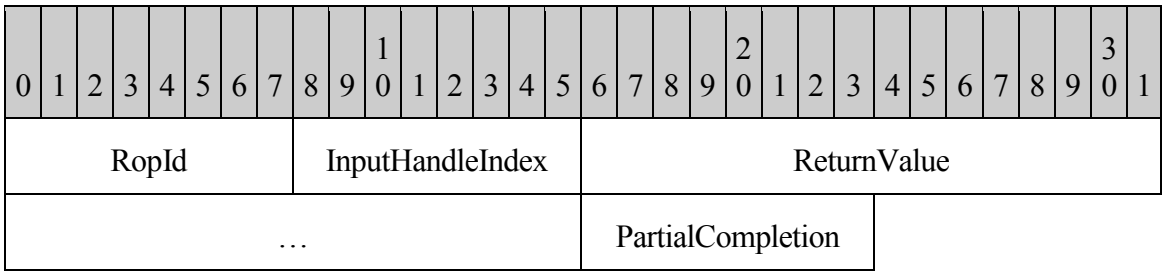


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x66.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

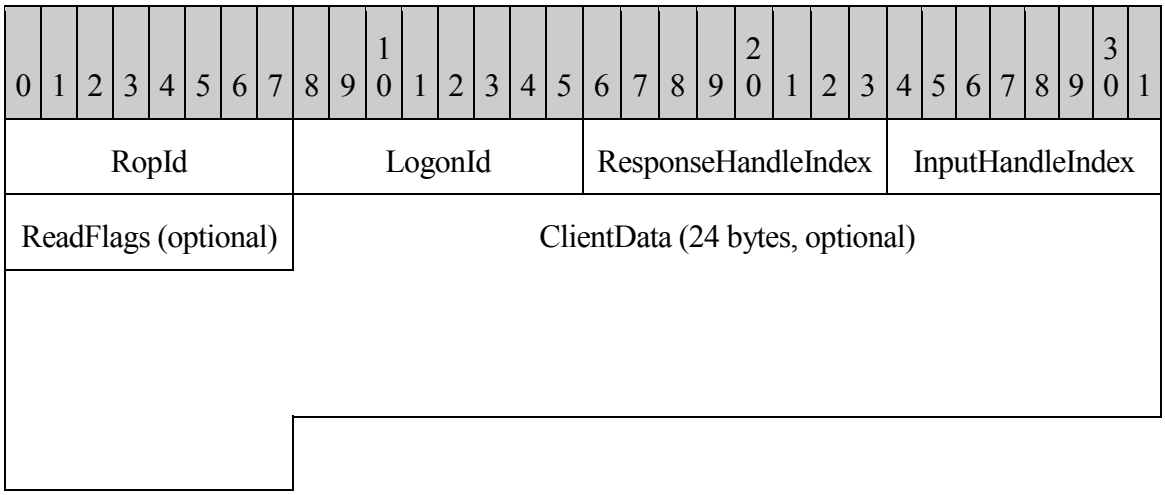
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

PartialCompletion (1 byte): 8-bit Boolean. This value indicates whether the operation was only partially completed. The operation is partially completed if the server was unable to modify one or more of the **Message objects** that are specified in the **MessageIds** field of the request.

2.2.5.11 RopSetMessageReadFlag

This remote operation sets or clears the message read flag. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.11.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x11.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

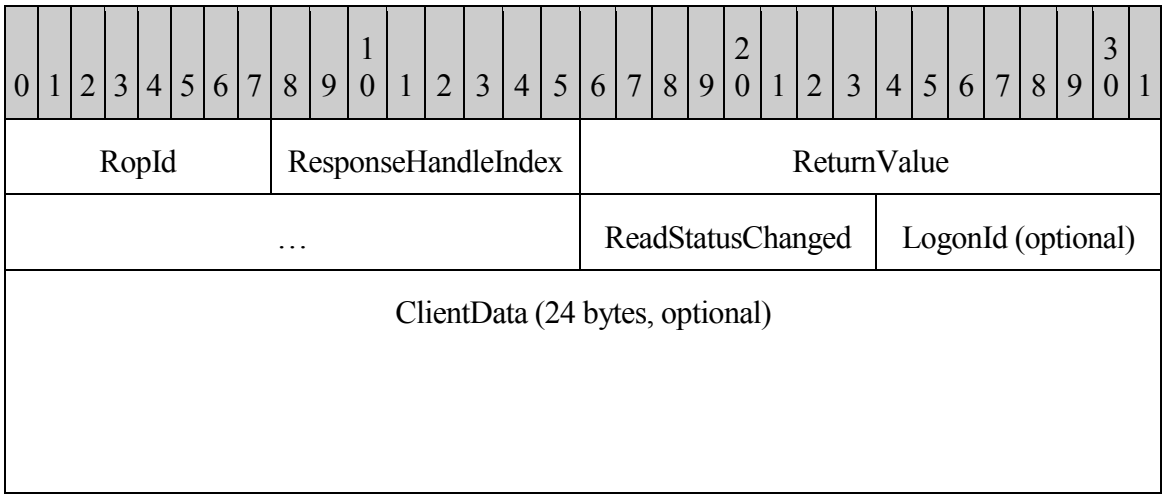
ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table that is referenced in the response. More information about Server Objects can be found in section 3.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

ReadFlags (1 byte, optional): 8-bit flags structure. This field MUST be present when the logon associated with **LogonId** was created with the Private flag unset (see [MS-OXCSTOR] for more information) and MUST NOT be present otherwise. The possible values for these flags are specified in [MS-OXCMSG].

ClientData (24 bytes, optional): Array of 24 bytes. This field MUST be present when the logon associated with **LogonId** was created with the Private flag unset (see [MS-OXCSTOR] for more information) and MUST NOT be present otherwise. This value specifies the information that is returned to the client in a successful response.

2.2.5.11.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x11.

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ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **ResponseHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

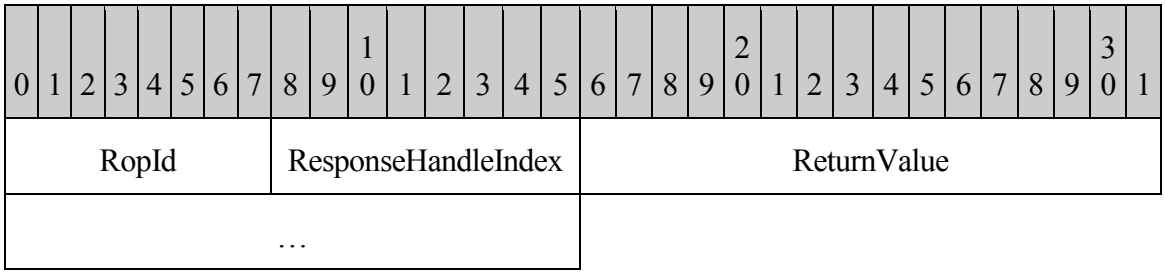
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

ReadStatusChanged (1 byte): 8-bit Boolean. This value specifies whether the read status of a public folder's message has changed.

LogonId (1 byte, optional): Unsigned 8-bit integer. This field MUST be present when the value in the **ReadStatusChanged** field is non-zero and MUST NOT be present otherwise. This value MUST be set to the **LogonId** specified in the request.

ClientData (24 bytes, optional): Array of 24 bytes. This field MUST be present when the value in the **ReadStatusChanged** field is non-zero and MUST NOT be present otherwise. This value MUST be set to the **ClientData** field in the request.

2.2.5.11.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x11.

ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **ResponseHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.12 RopOpenAttachment

This remote operation opens an attachment of a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.12.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								InputHandleIndex								OutputHandleIndex							
OpenAttachmentFlags								AttachmentID																							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x22.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

OpenAttachmentFlags (1 byte): 8-bit flags structure. This field contains flags for opening attachments. The possible values are specified in [MS-OXCMSG].

AttachmentID (4 bytes): Unsigned 32-bit integer. This value identifies the attachment to be opened. The value of this field is equivalent to the **PidTagAttachNumber** property.

2.2.5.12.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								OutputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x22.

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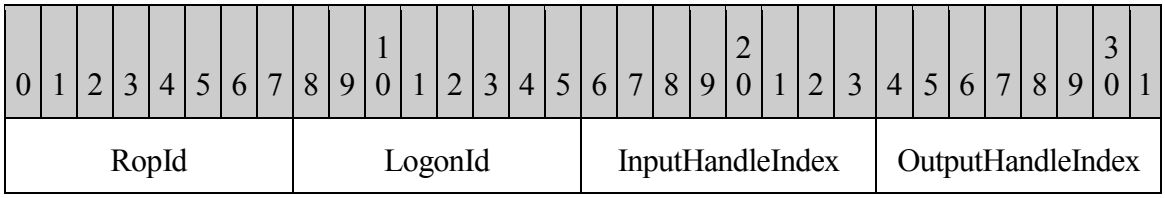
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.5.13 RopCreateAttachment

This remote operation creates a new attachment on a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.13.1 Request Buffer



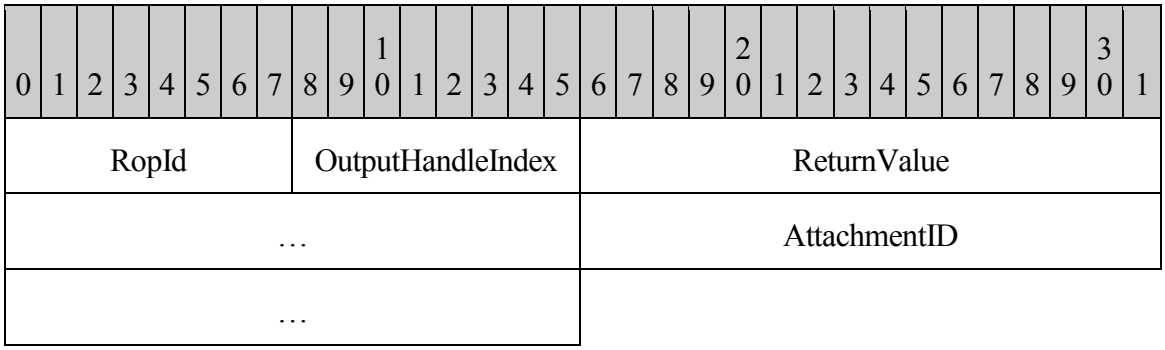
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x23.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

2.2.5.13.2 Success Response Buffer



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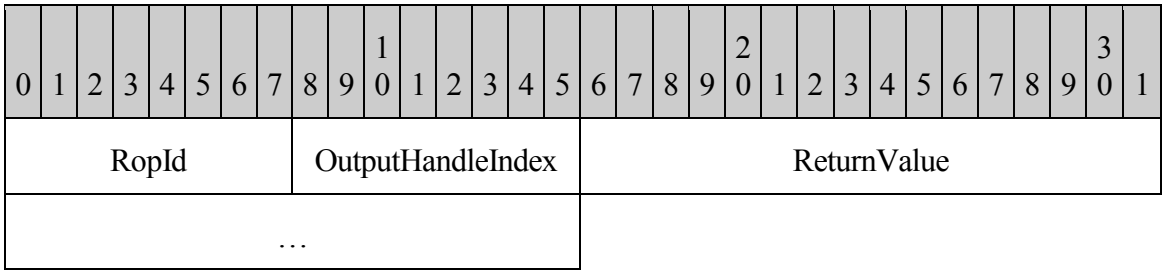
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x23.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

AttachmentID (4 bytes): Unsigned 32-bit integer. This ID refers to the attachment created. The value of this field is equivalent to the PidTagAttachNumber property.

2.2.5.13.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x23.

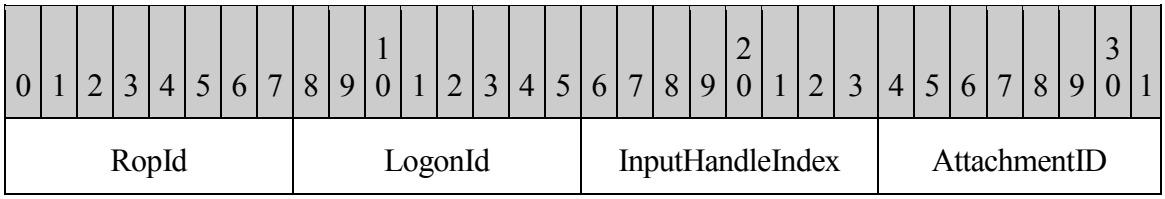
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.14 RopDeleteAttachment

This remote operation deletes an attachment on a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.14.1 Request Buffer



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…

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x24.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

AttachmentID (4 bytes): Unsigned 32-bit integer. This value identifies the attachment to be deleted. The value of this field is equivalent to the **PidTagAttachNumber** property.

2.2.5.14.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x24.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.5.15 RopSaveChangesAttachment

This remote operation commits the changes made to an attachment. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.15.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								ResponseHandleIndex								InputHandleIndex							
SaveFlags																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x25.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table that is referenced in the response. More information about Server Objects can be found in section 3.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

SaveFlags (1 byte): 8-bit flags structure. The possible values for these flags are specified in [MS-OXCMSG]. These flags specify how the save operation behaves.

2.2.5.15.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								ResponseHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x25.

ResponseHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **ResponseHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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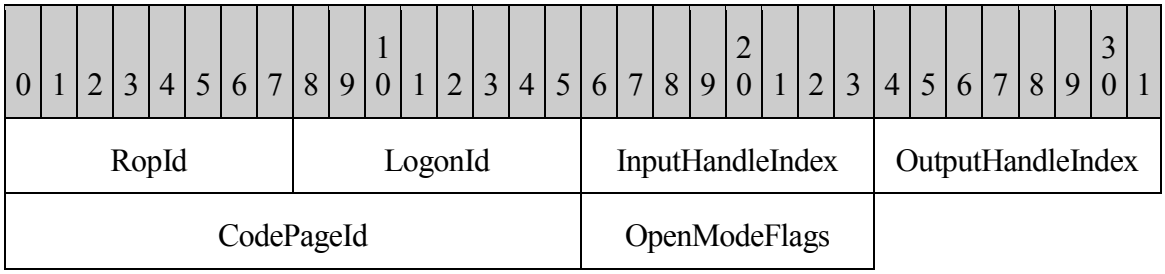
2.2.5.16 RopOpenEmbeddedMessage

This remote operation opens an attachment as a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.16.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x46.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

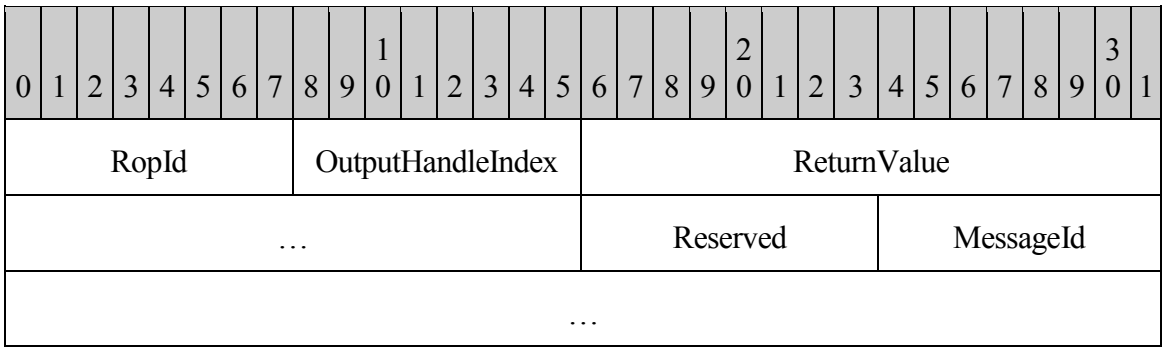
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

CodePageId (2 bytes): 16-bit identifier. This value specifies which code page is used for string values associated with the message.

OpenModeFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCMSG]. These flags control the access to the message.

2.2.5.16.2 Success Response Buffer



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…		HasNamedProperties
SubjectPrefix (variable)		
…	NormalizedSubject (variable)	
…	RecipientCount	ColumnCount
…	RecipientColumns (variable)	
…	RowCount	RecipientRows (variable)
…		

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x46.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

Reserved (1 byte): Reserved. This value MUST be set to 0x00

MessageId (8 bytes): 64-bit identifier. This value specifies the ID of the embedded message.

HasNamedProperties (1 byte): 8-bit Boolean. This value specifies whether the message has named properties.

SubjectPrefix (variable): TypedString structure. The format of the **TypedString** structure is specified in [MS-OXCDATA]. This structure specifies the subject prefix of the message.

NormalizedSubject (variable): TypedString structure. The format of the **TypedString** structure is specified in [MS-OXCDATA]. This structure specifies the normalized subject of the message.

RecipientCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of recipients on the message.

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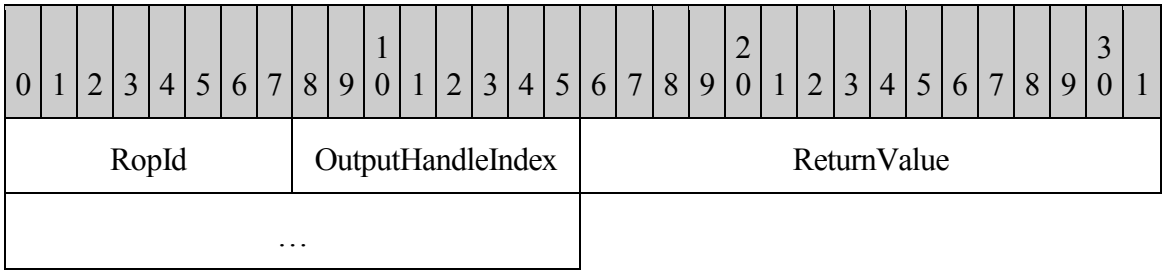
ColumnCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **RecipientColumns** field.

RecipientColumns (variable): Array of **PropertyTag** structures. This field MUST contain **ColumnCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values that can be included for each recipient row.

RowCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of rows in the **RecipientRows** field.

RecipientRows (variable): List of **OpenRecipientRow** structures. This array MUST contain the same number of structures as specified in the **RowCount** field. The format of the **OpenRecipientRow** structure is defined in section 2.2.5.1.2.1.

2.2.5.16.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x46.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.5.17 RopGetAttachmentTable

This remote operation gets the attachment table of a message. More detailed information about this operation can be found in [MS-OXCMSG].

2.2.5.17.1 Request Buffer

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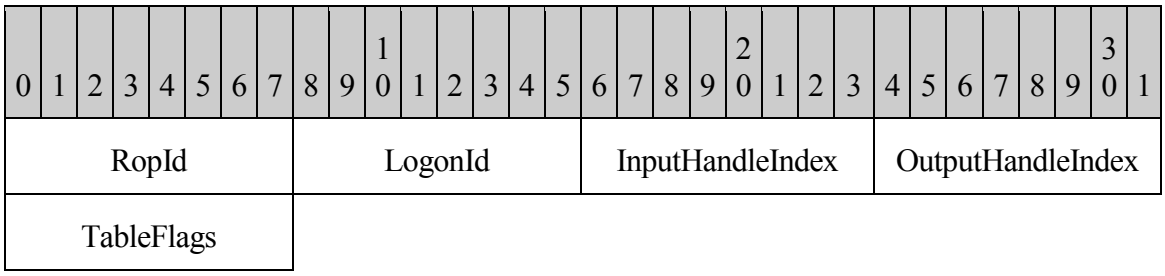


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x21.

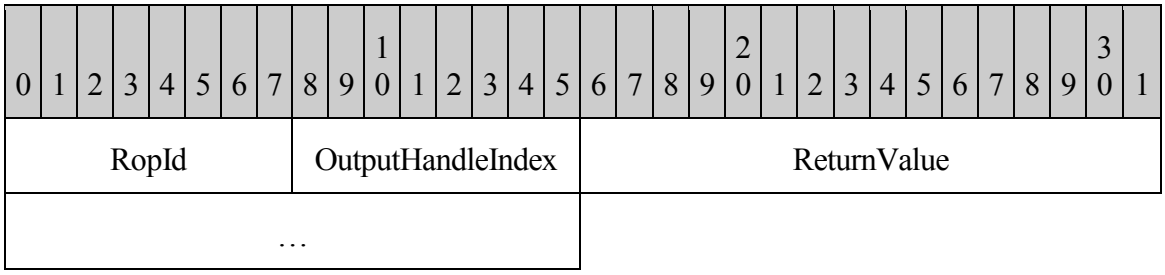
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

TableFlags (1 byte): 8-bit flags structure. These flags control the type of table. The possible values are specified in [MS-OXCMSG].

2.2.5.17.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x21.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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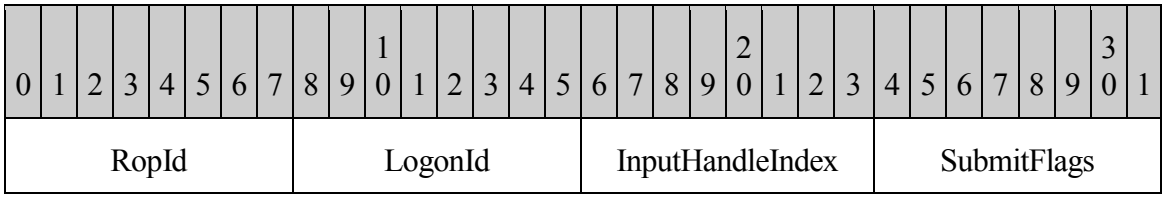
2.2.6 Transport ROPs

2.2.6.1 RopSubmitMessage

This remote operation submits a message for sending. More detailed information about this operation can be found in [MS-OXOMSG].

2.2.6.1.1 Request Buffer



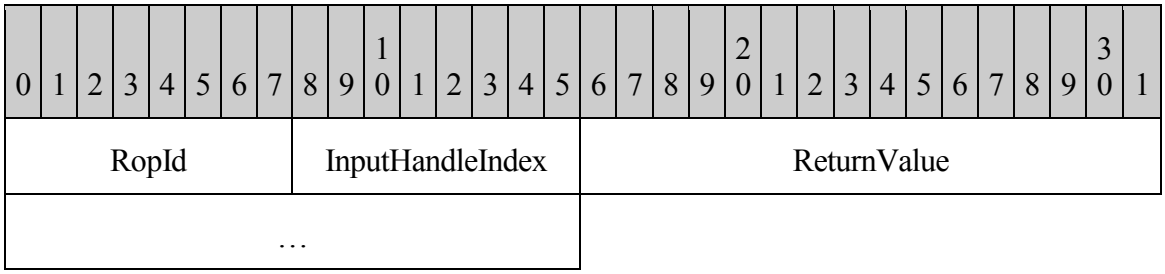
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x32.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

SubmitFlags (1 byte): 8-bit flags structure. These flags specify special behavior for submitting the message. The possible values are specified in [MS-OXOMSG].

2.2.6.1.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x32.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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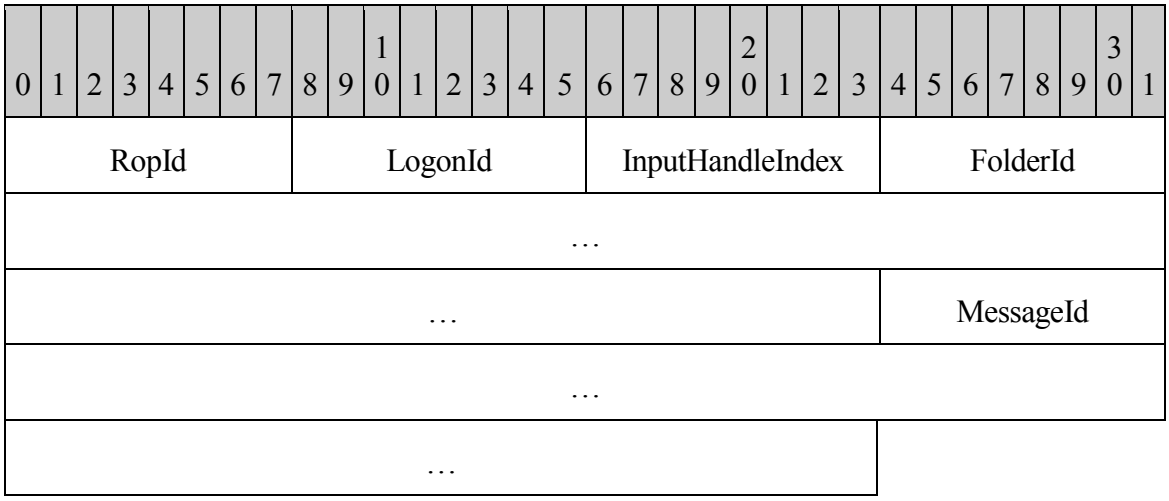
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.6.2 RopAbortSubmit

This remote operation aborts a previous message submission. More detailed information about this operation can be found in [MS-OXOMSG].

2.2.6.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x34.

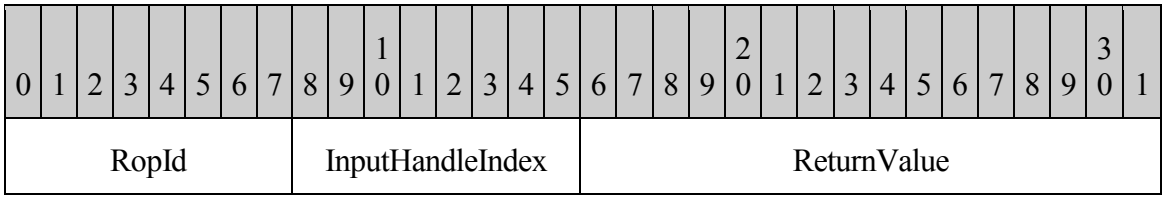
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

FolderId (8 bytes): 64-bit identifier. This value identifies the folder in which the submitted message is located.

MessageId (8 bytes): 64-bit identifier. This value identifies the submitted message.

2.2.6.2.2 Response Buffer



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…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x34.

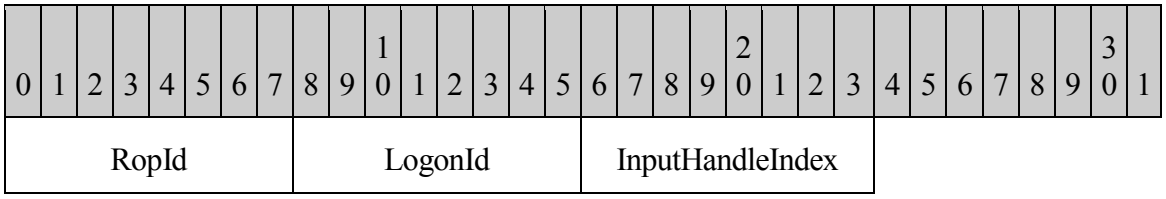
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.6.3 RopGetAddressTypes

This remote operation returns the type of recipients handled by a transport provider. More detailed information about this operation can be found in [MS-OXOMSG].

2.2.6.3.1 Request Buffer

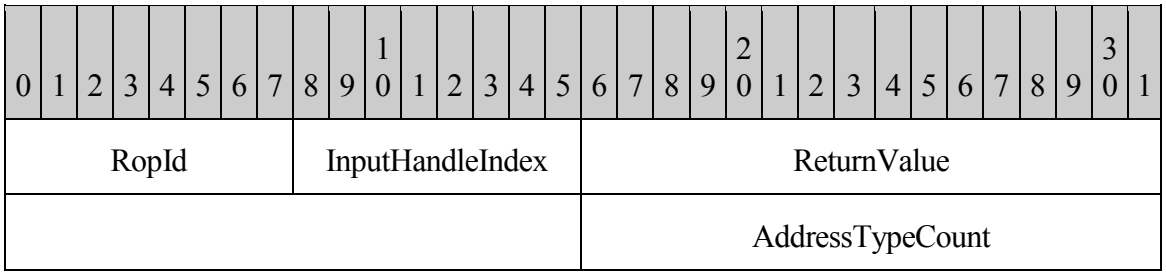


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x49.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.6.3.2 Success Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x49.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

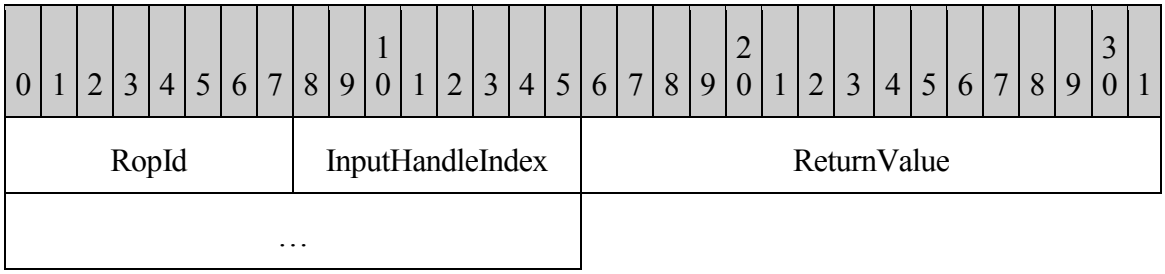
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

AddressTypeCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of strings in the **AddressTypes** field.

AddressTypeSize (2 bytes): Unsigned 16-bit integer. This value specifies the length of the **AddressTypes** field.

AddressTypes (variable): List of null-terminated ASCII strings. This field MUST contain the same number of string specified in the **AddressTypeCount** field and MUST have the same number of total characters as specified in the **AddressTypeSize** field.

2.2.6.3.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x49.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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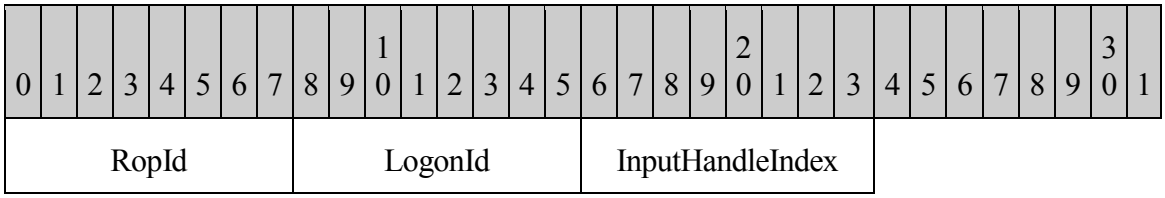
2.2.6.4 RopSetSpooler

This remote operation informs the server that the client intends to act as a mail spooler. More detailed information about this operation can be found in [MS-OXOMSG].

2.2.6.4.1 Request Buffer

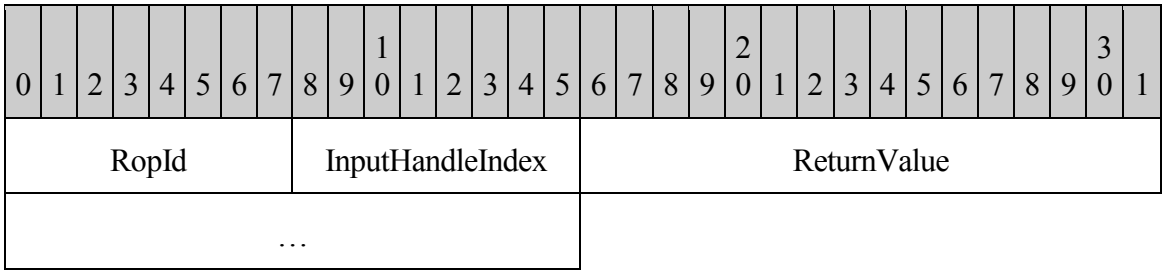


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x47.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.6.4.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x47.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.6.5 RopSpoolerLockMessage

This remote operation locks the specified message for spooling. More detailed information about this operation can be found in [MS-OXOMSG].

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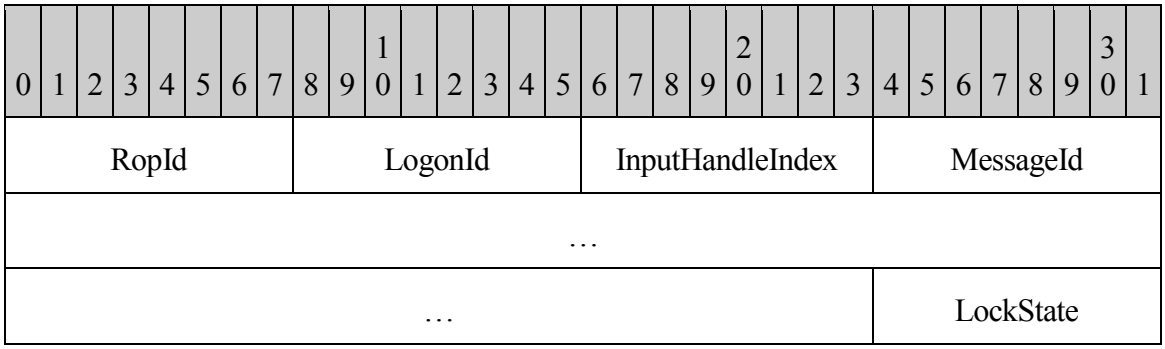
2.2.6.5.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x48.

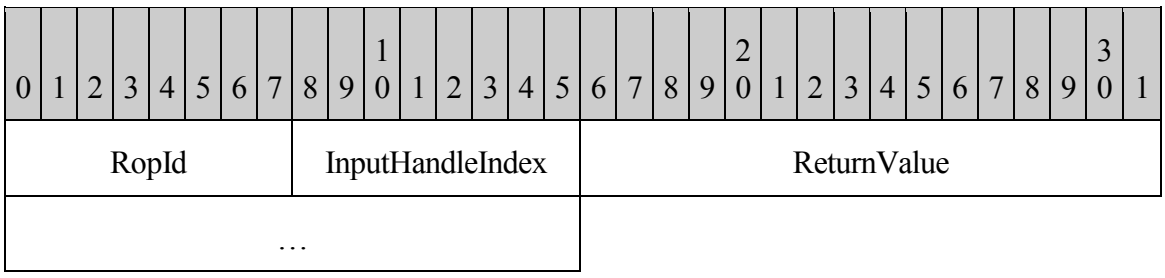
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

MessageId (8 bytes): Unsigned 64-bit integer. This value identifies the message for which the status will be changed.

LockState (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXOMSG].

2.2.6.5.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x48.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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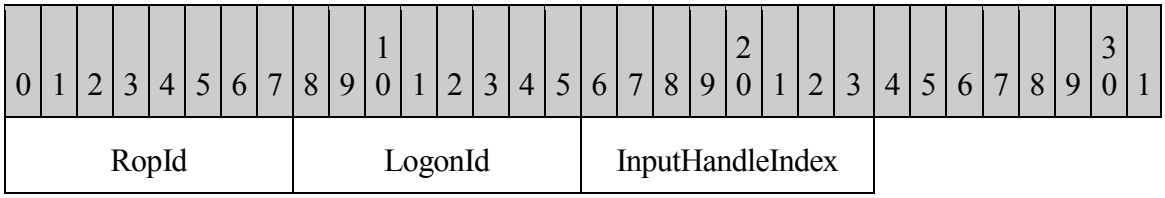
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.6.6 RopTransportSend

This remote operation sends the specified Message object out for message delivery. More detailed information about this operation can be found in [MS-OXOMSG].

2.2.6.6.1 Request Buffer

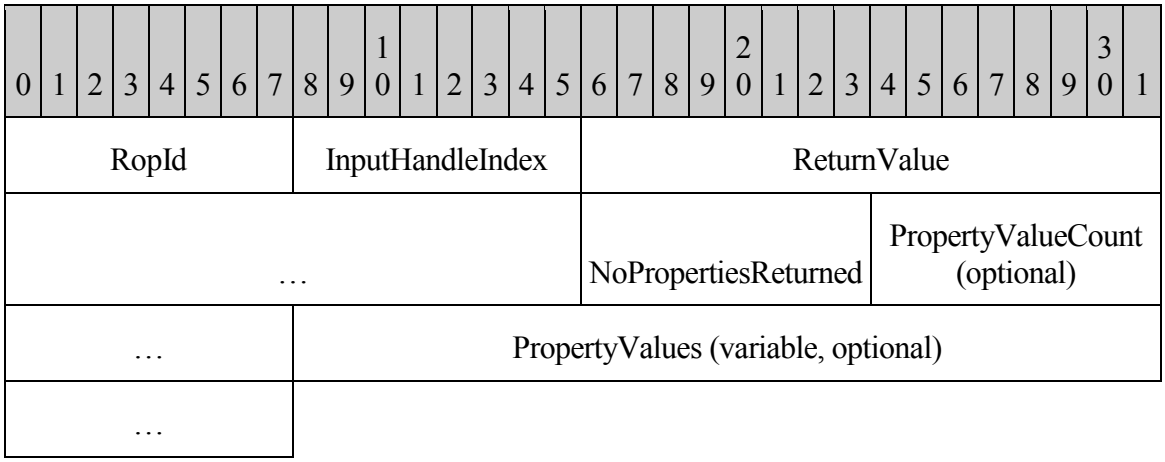


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4A.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.6.6.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4A.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

NoPropertiesReturned (1 byte): 8-bit Boolean. This value specifies whether property values are returned.

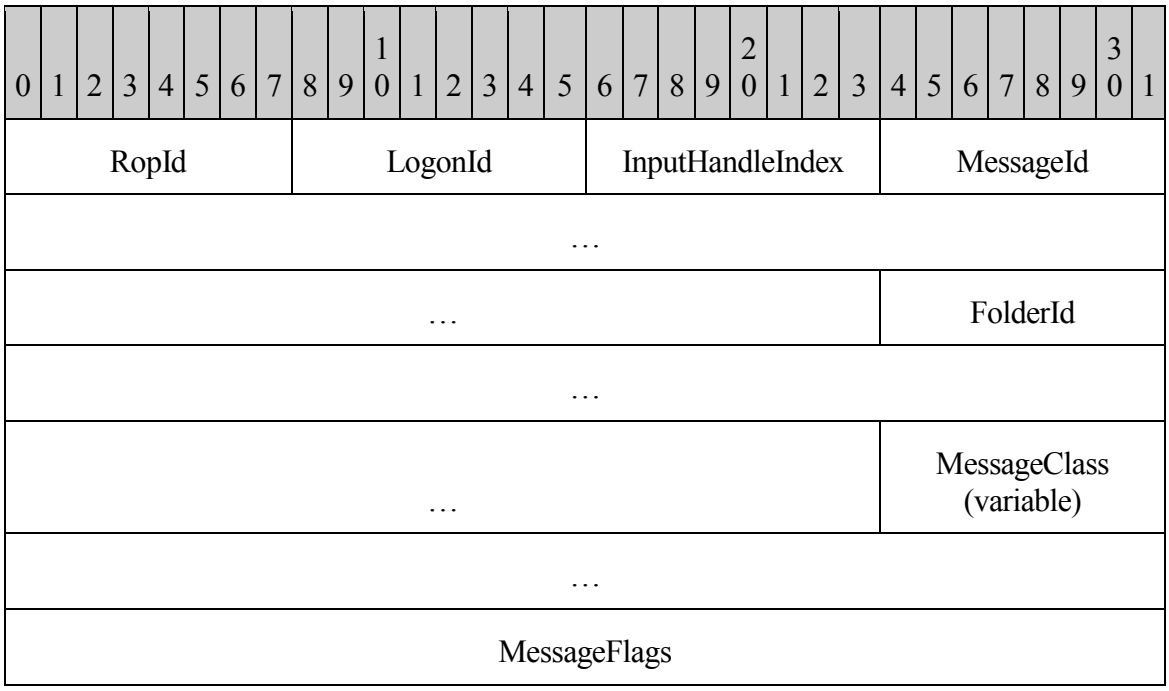
PropertyValueCount (2 bytes, optional): Unsigned 16-bit integer. This value specifies the number of structures returned in the *PropertyValues* field.

PropertyValues (variable, optional): Array of **PropertyValue** structures. The format of the **PropertyValue** structure is specified in [MS-OXCDATA]. This field MUST contain the same number of structures as specified in the *PropertyValueCount* field. This array specifies the properties to copy.

2.2.6.7 RopTransportNewMail

This remote operation informs the server of new mail. More detailed information about this operation can be found in [MS-OXOMSG].

2.2.6.7.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x51.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

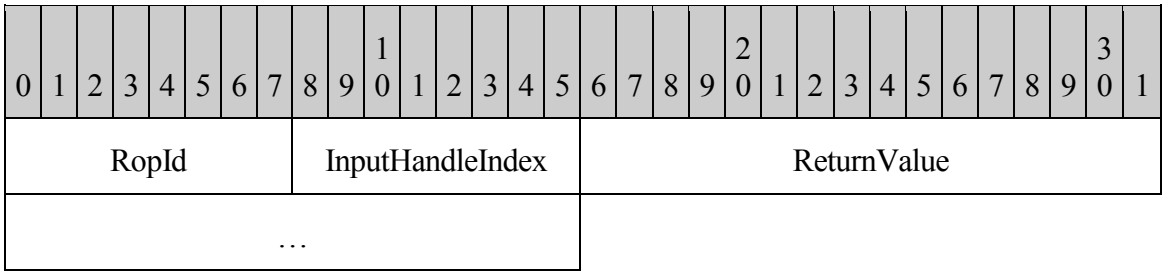
MessageId (8 bytes): 64-bit identifier. This value identifies the new Message object.

FolderId (8 bytes): 64-bit identifier. This value identifies the folder of the new Message object.

MessageClass (variable): Null-terminated ASCII string. This string specifies the message class of the new Message object.

MessageFlags (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCMSG]. This field contains the message flags of the new message object.

2.2.6.7.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x51.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.6.8 RopGetTransportFolder

This remote operation retrieves the folder ID of the temporary transport folder. More detailed information about this operation can be found in [MS-OXOMSG].

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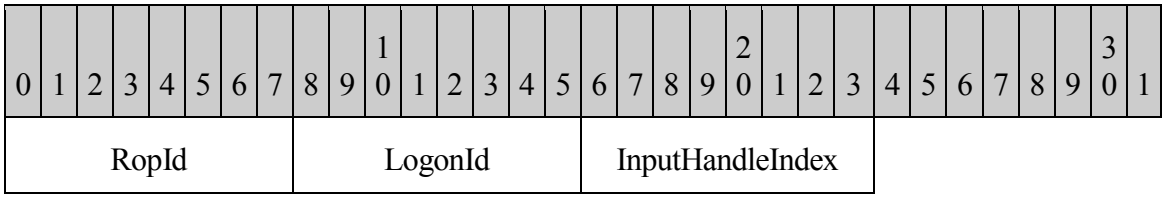
2.2.6.8.1 Request Buffer

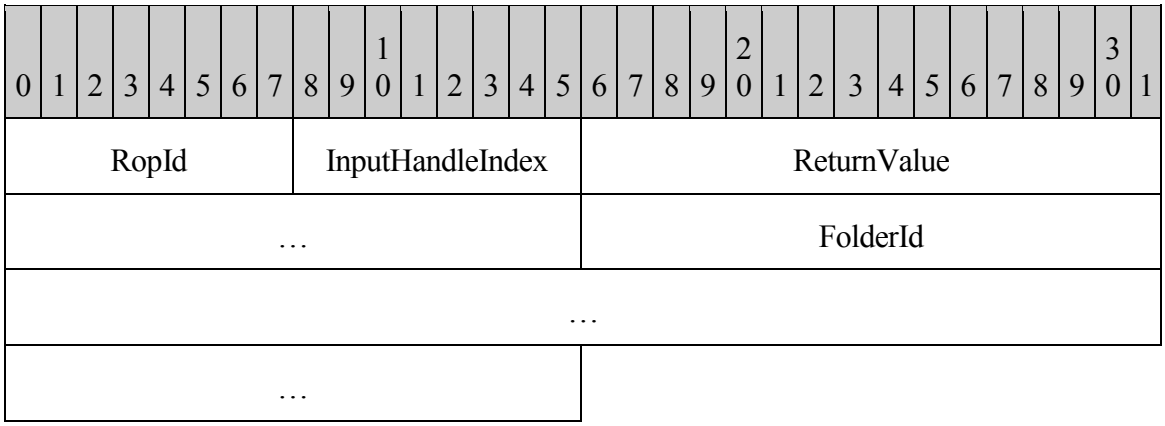


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6D.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.6.8.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6D.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

FolderId (8 bytes): 64-bit Identifier. This value identifies the transport folder.

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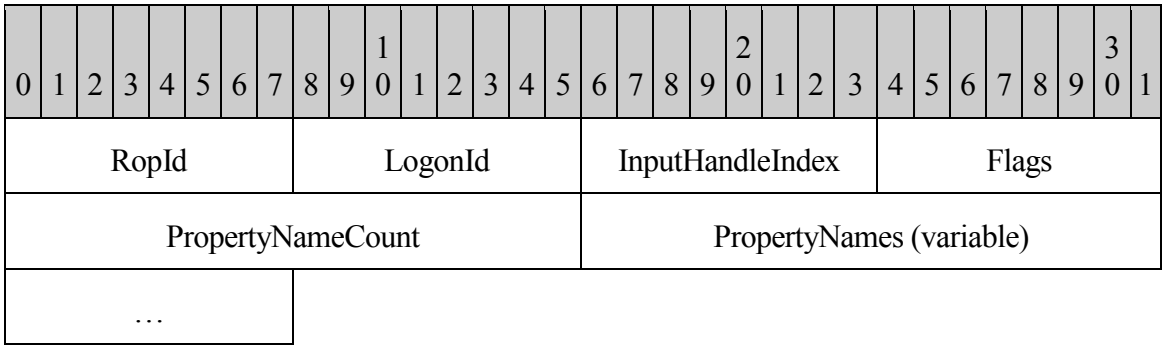
2.2.7 Property ROPs

2.2.7.1 RopGetPropertyIdsFromNames

This remote operation gets property IDs for specified property names. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x56.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Flags (1 byte): 8-bit flags structure. These flags control the behavior of this operation. The possible values are specified in [MS-OXCPRPT].

PropertyNameCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyNames** field.

PropertyNames (variable): List of **PropertyName** structures. This field MUST contain the same number of structures as specified in the **PropertyNameCount** field. The format of the **PropertyName** structure is specified in [MS-OXCDATA]. This field specifies the property names requested.

2.2.7.1.2 Success Response Buffer

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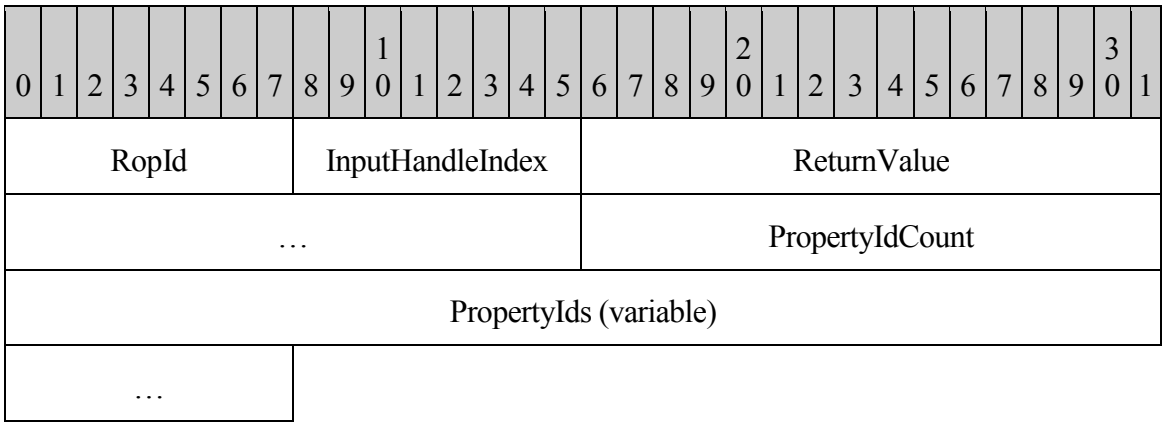


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x56.

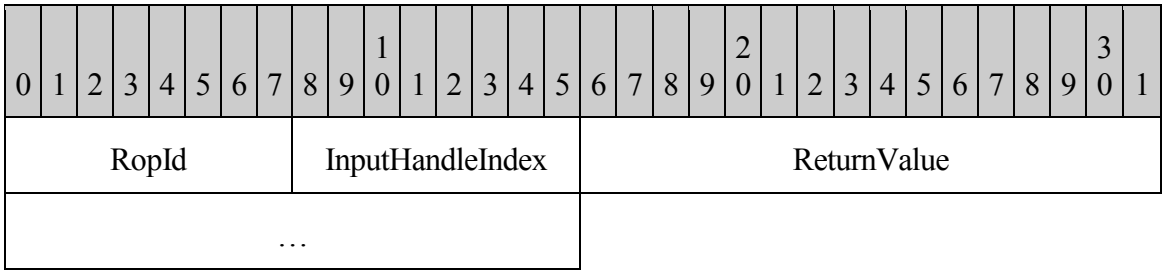
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyId structures in the **PropertyIds** field.

PropertyIds (variable): Array of **PropertyIds** structures. This field MUST contain the same number of structures as specified in the **PropertyIdCount** field. The format of the **PropertyId** structure is specified in [MS-OXCDATA]. This field lists the property IDs associated with the requested property names, which are specified in the **PropertyNames** field of the request.

2.2.7.1.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x56.

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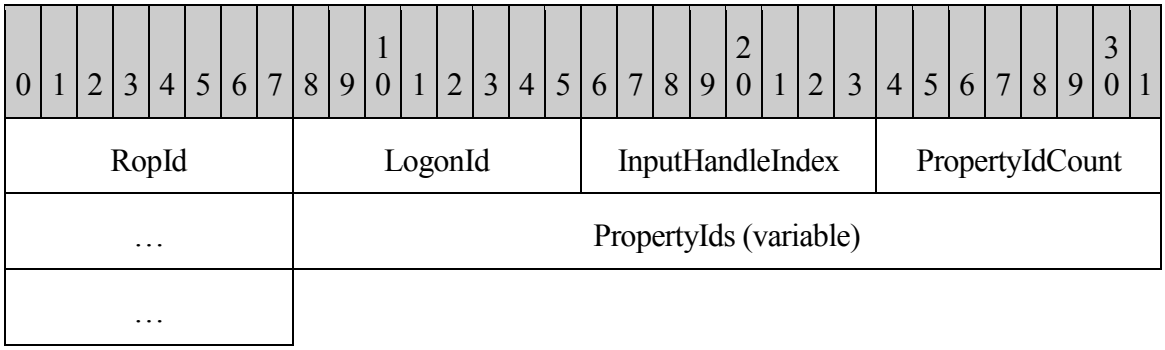
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.2 RopGetNamesFromPropertyIds

This remote operation gets property names for specified property IDs. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x55.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

PropertyIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyId structures in the **PropertyIds** field.

PropertyIds (variable): Array of **PropertyId** structures. This field MUST contain the same number of structures as specified in the **PropertyIdCount** field. The format of the **PropertyId** structure is specified in [MS-OXCDATA]. This field specifies which property IDs for which to retrieve names.

2.2.7.2.2 Success Response Buffer

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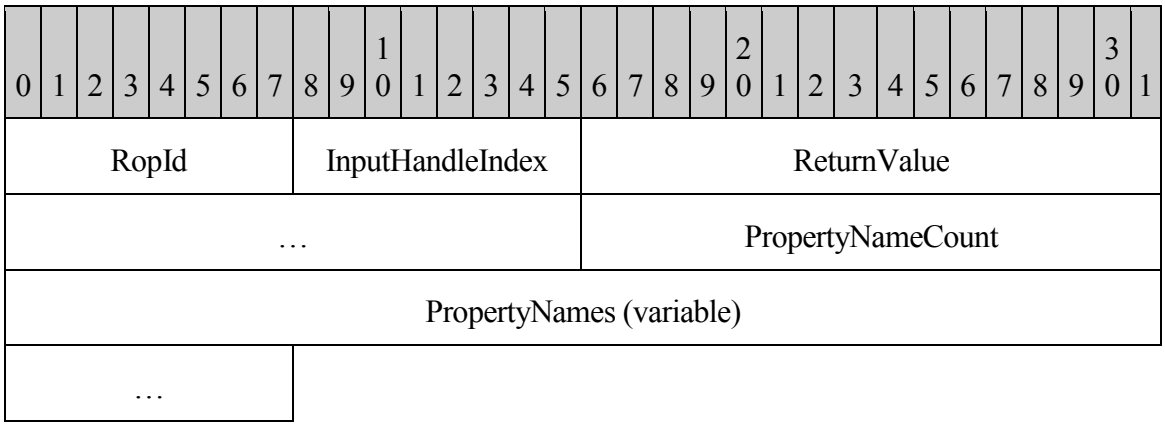


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x55.

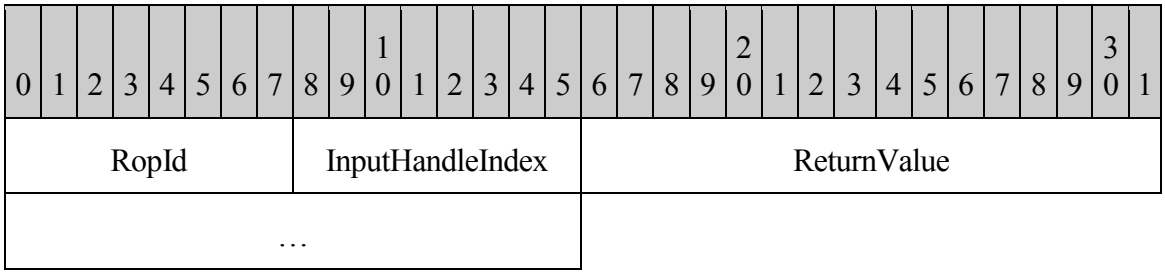
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyNameCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyNames** field.

PropertyNames (variable): List of **PropertyName** structures. This field MUST contain the same number of structures as specified in the **PropertyNameCount** field. The format of the **PropertyName** structure is specified in [MS-OXCDATA]. This field lists the property names for the property IDs requested.

2.2.7.2.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x55.

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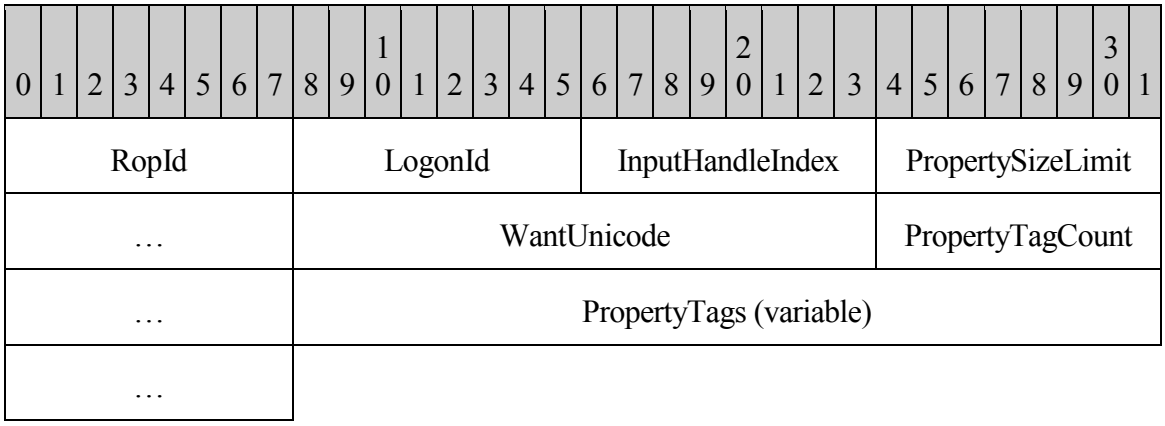
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.3 RopGetPropertiesSpecific

This remote operation gets property values for specified property tags. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.3.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x07.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

PropertySizeLimit (2 bytes): Unsigned 16-bit integer. This value specifies the maximum size allowed for a property value returned.

WantUnicode (2 bytes): 16-bit Boolean. This value specifies whether to return string properties in Unicode.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies how many tags are present in **PropertyTags**.

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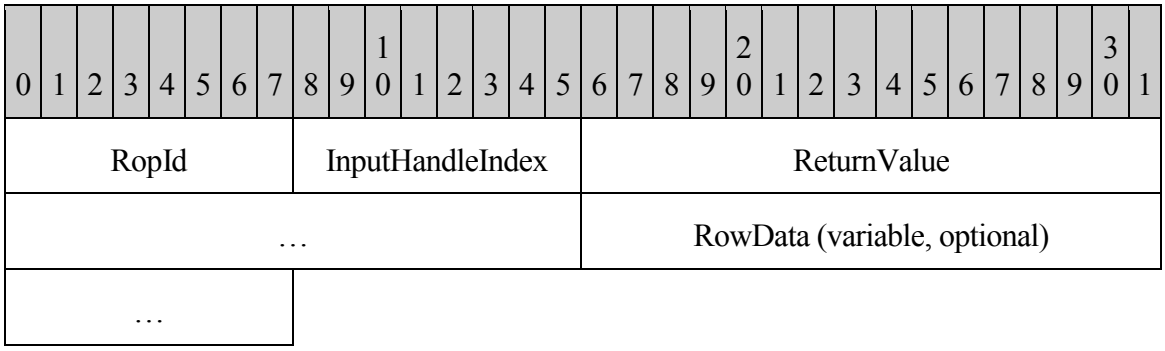
PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain **PropertyTagCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the properties requested.

2.2.7.3.2 Success Response Buffer



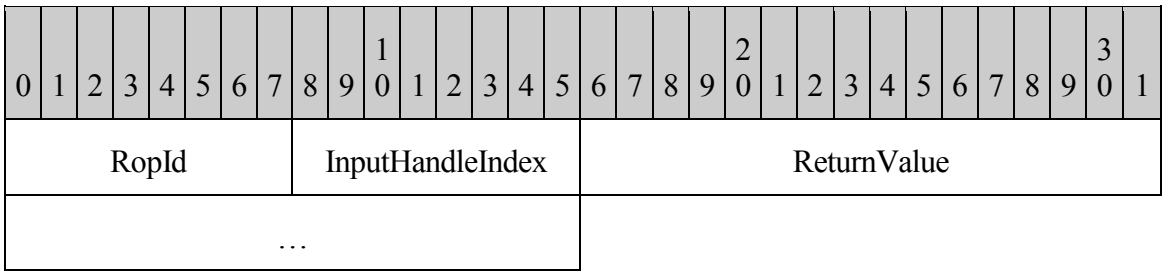
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x07.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

RowData (variable): PropertyRow structure. The format of the **PropertyRow** structure is specified in [MS-OXCDATA] and the columns used for these rows were those specified in the **PropertyTags** field in the request.

2.2.7.3.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x07.

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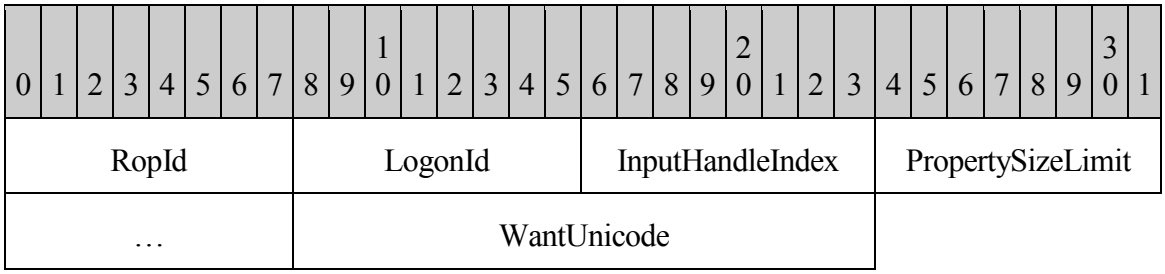
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.4 RopGetPropertiesAll

This remote operation gets all the property values for an object. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.4.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x08.

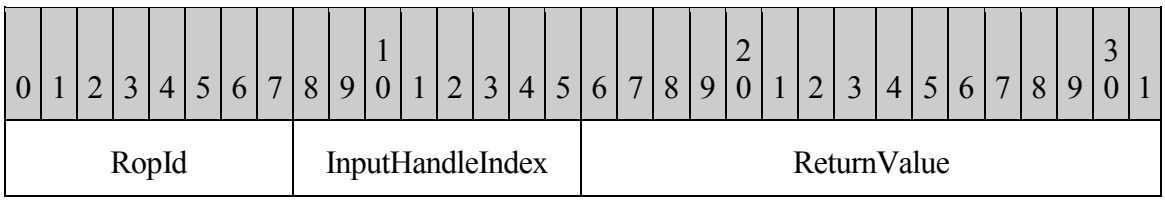
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

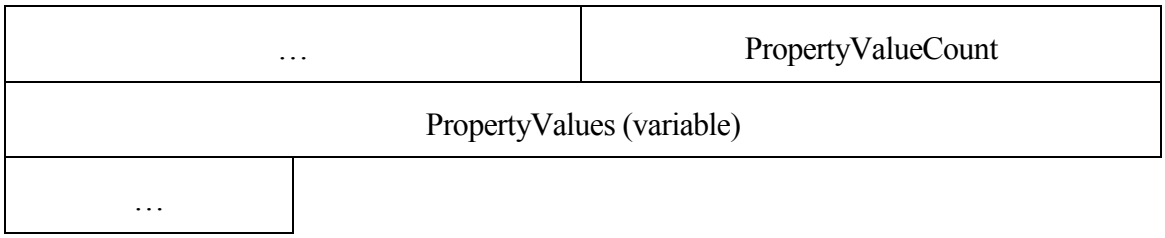
PropertySizeLimit (2 bytes): Unsigned 16-bit integer. This value specifies the maximum size allowed for a property value returned.

WantUnicode (2 bytes): 16-bit Boolean. This value specifies whether to return string properties in Unicode.

2.2.7.4.2 Success Response Buffer



Copyright © 2008 Microsoft Corporation.



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x08.

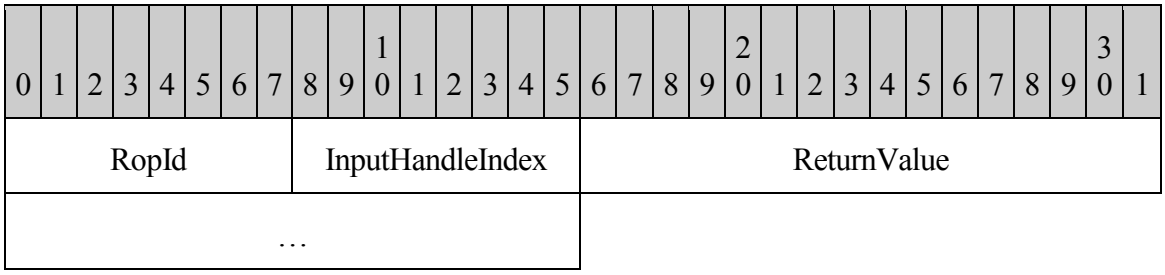
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyValue structures present in **PropertyValues**.

PropertyValues (variable): List of **PropertyValue** structures. This field MUST contain the same number of values as specified in **PropertyValueCount**. These values are the properties defined on the object. The format of the **PropertyValue** structure is specified in [MS-OXCDATA].

2.2.7.4.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x08.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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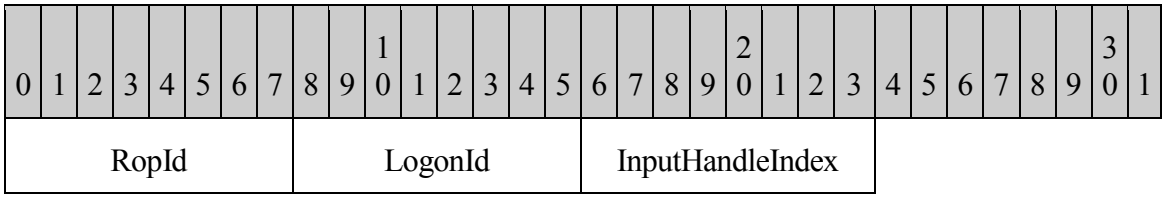
2.2.7.5 RopGetPropertiesList

This remote operation gets the list of property tags for an object. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.5.1 Request Buffer

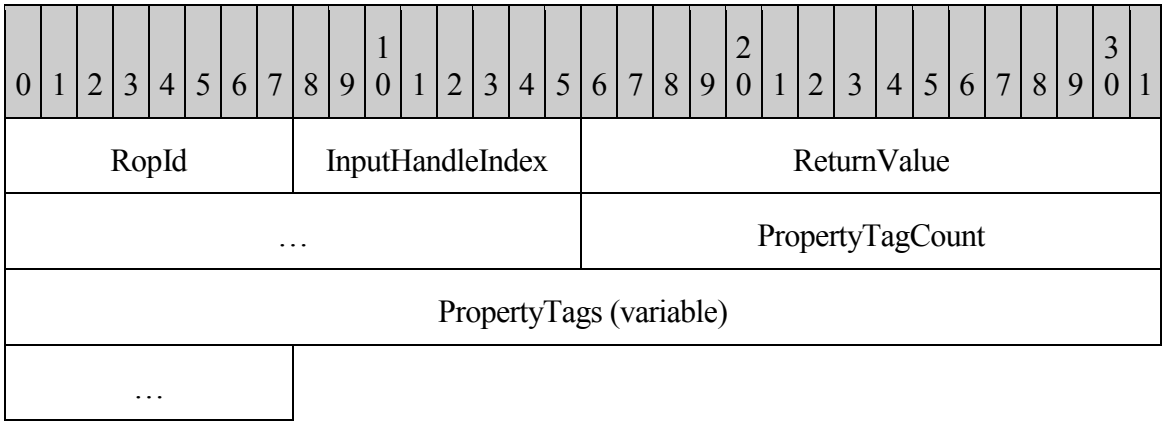


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x09.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.7.5.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x09.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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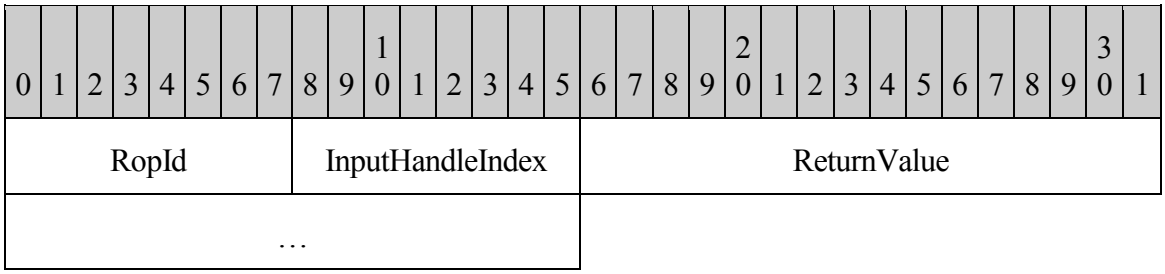
PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of property tags in the **PropertyTags** field.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain the same number of values as specified in **PropertyTagCount**. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field lists the property tags on the object.

2.2.7.5.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x09.

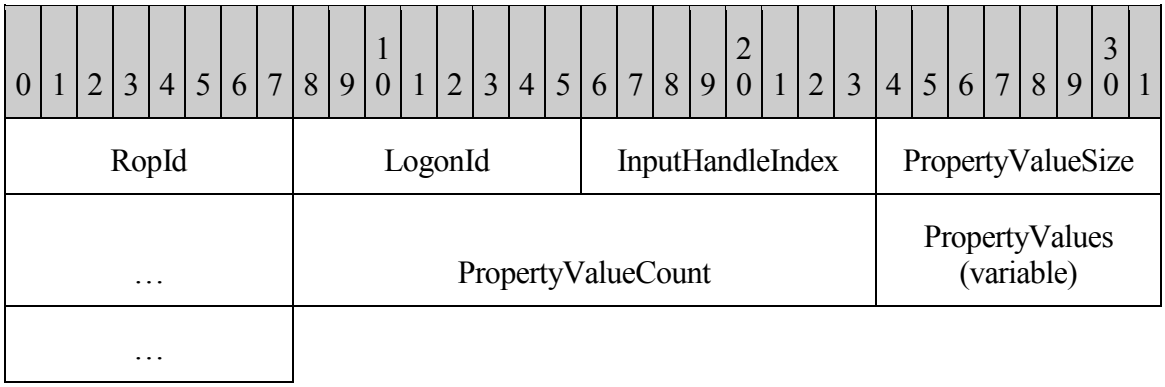
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.6 RopSetProperties

This remote operation sets property values for an object. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.6.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0A.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

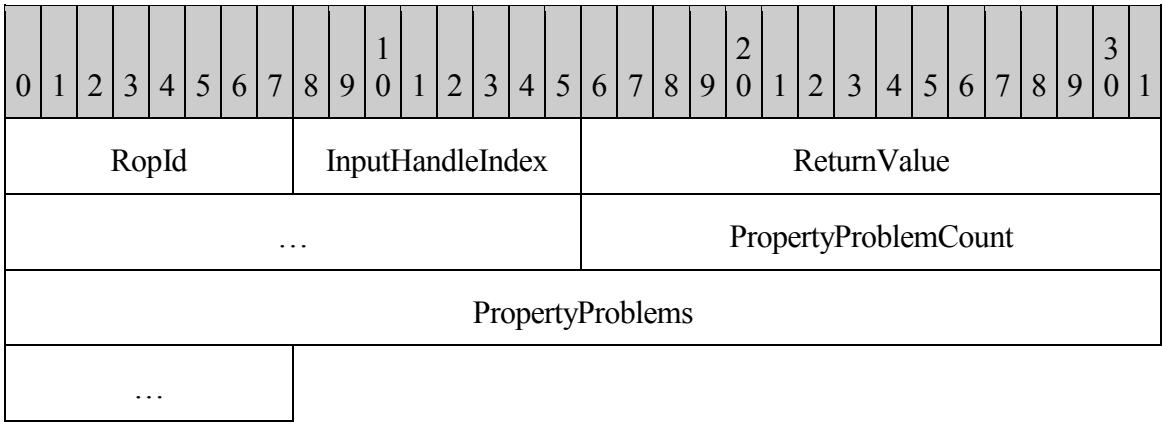
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

PropertyValueSize (2 bytes): Unsigned 16-bit integer. This value specifies the number of bytes used for **PropertyValueCount** and **PropertyValues**.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyValue structures listed in the **PropertyValues** field.

PropertyValues (variable): List of **PropertyValue** structures. This field MUST contain the same number of values as specified in **PropertyValueCount**. The format of the **PropertyValue** structure is specified in [MS-OXCDATA]. This field specifies the property values to be set on the object.

2.2.7.6.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0A.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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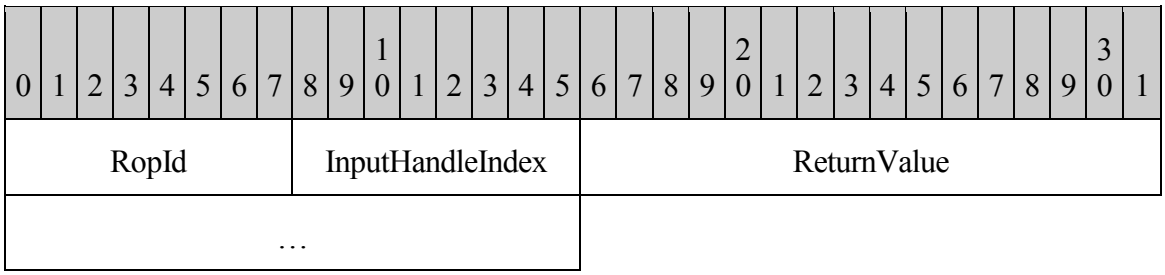
PropertyProblemCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyProblem structures in the **PropertyProblems** field.

PropertyProblems (variable): Array of **PropertyProblem** structures. This field MUST contain the same number of structures as specified in the **PropertyProblemCount** field. The format of the **PropertyProblem** structure is specified in [MS-OXCDATA]

2.2.7.6.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0A.

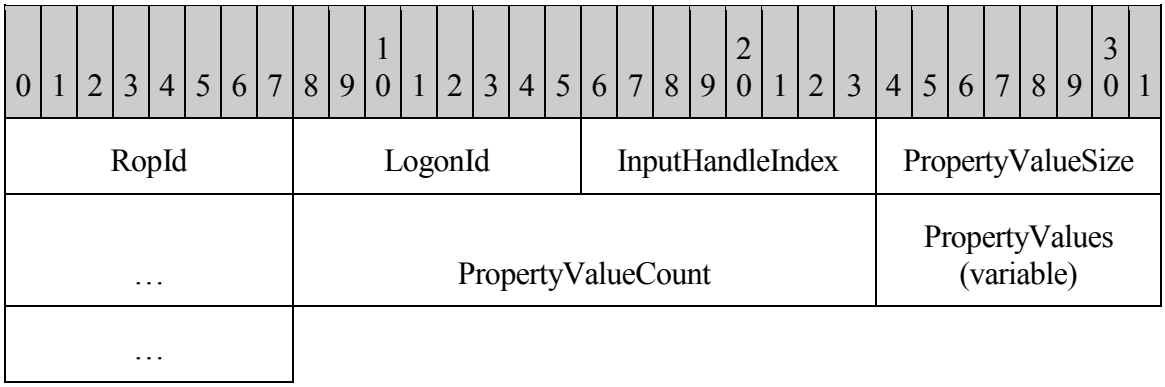
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.7 RopSetPropertiesNoReplicate

This remote operation sets property values for an object without invoking replication. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.7.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x79.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

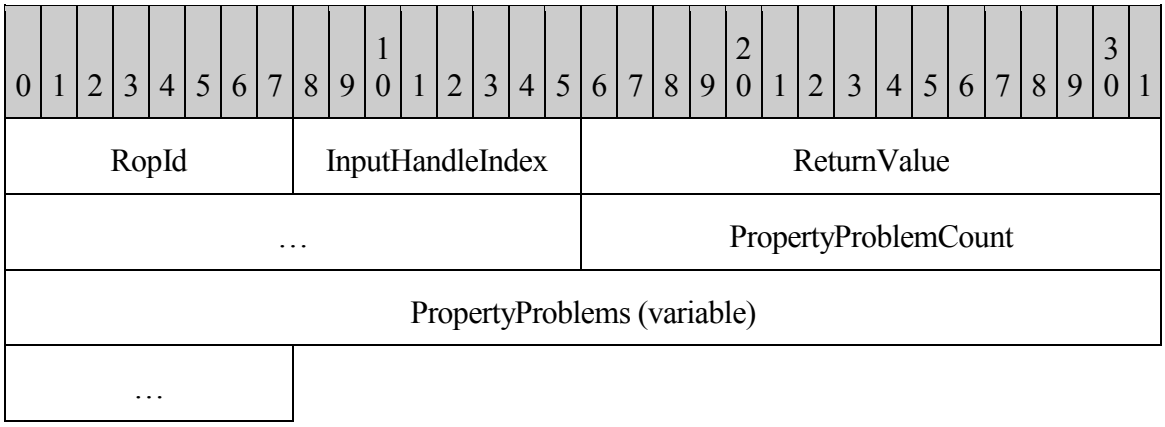
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

PropertyValueSize (2 bytes): Unsigned 16-bit integer. This value specifies the number of bytes used for **PropertyValueCount** and **PropertyValues**.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyValue structures listed in the **PropertyValues** field.

PropertyValues (variable): List of **PropertyValue** structures. This field MUST contain the same number of values as specified in **PropertyValueCount**. The format of the **PropertyValue** structure is specified in [MS-OXCDATA]. This field specifies the property values to be set on the object.

2.2.7.7.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x79.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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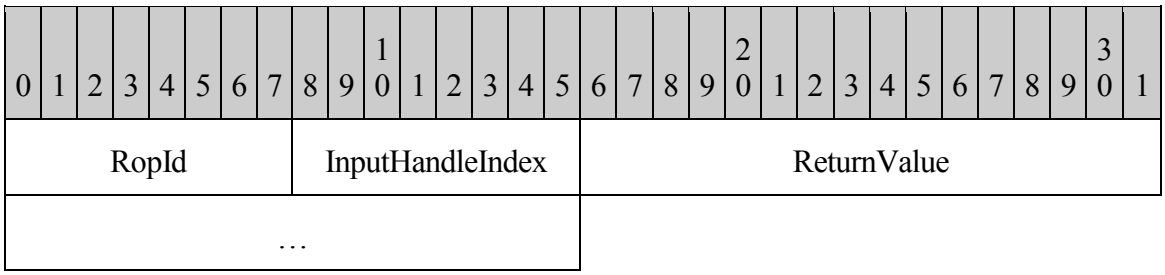
PropertyProblemCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyProblem structures in the **PropertyProblems** field.

PropertyProblems (variable): Array of **PropertyProblem** structures. This field MUST contain the same number of structures as specified in the **PropertyProblemCount** field. The format of the **PropertyProblem** structure is specified in [MS-OXCDATA].

2.2.7.7.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x79.

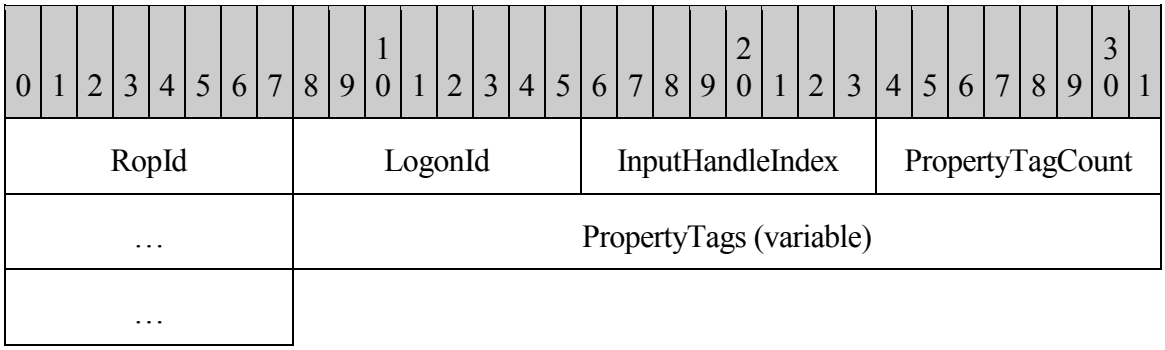
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.8 RopDeleteProperties

This remote operation deletes property values for an object. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.8.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0B.

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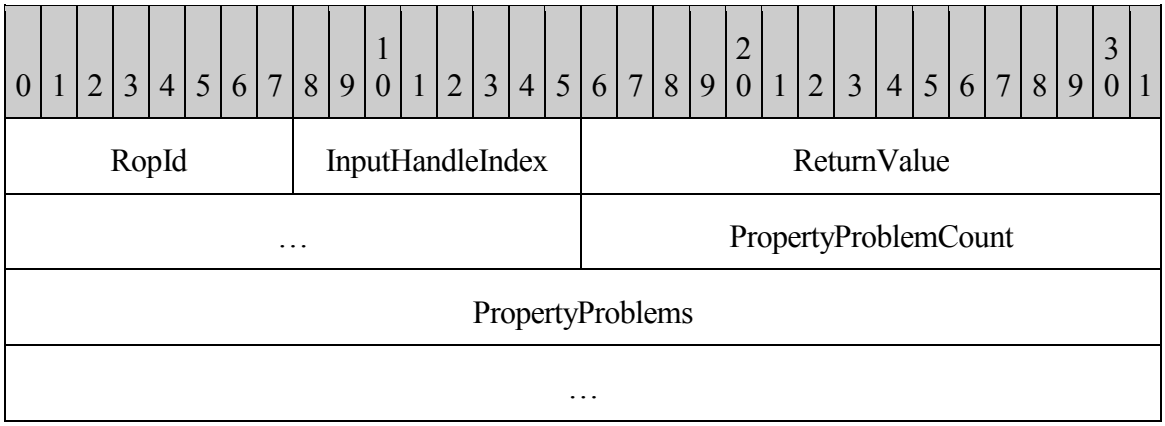
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyTag structures in the **PropertyTags** field.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain the same number of values as specified in the **PropertyTagCount** field. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values to be deleted from the object.

2.2.7.8.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0B.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyProblemCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyProblem structures in the **PropertyProblems** field.

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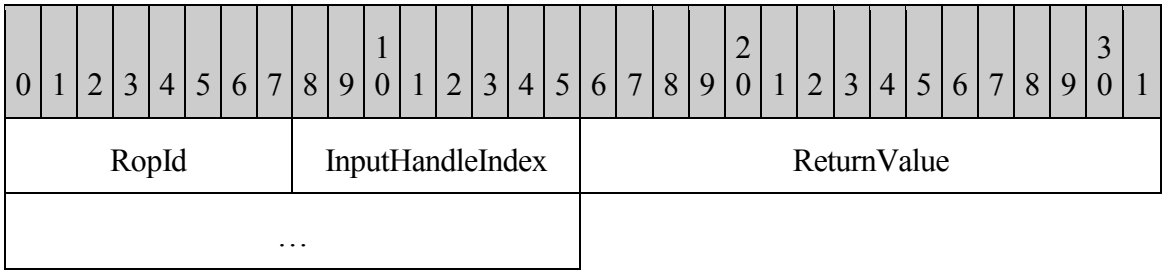
PropertyProblems (variable): Array of **PropertyProblem** structures. This field MUST contain the same number of structures as specified in the **PropertyProblemCount** field. The format of the **PropertyProblem** structure is specified in [MS-OXCDATA].

2.2.7.8.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x0B.

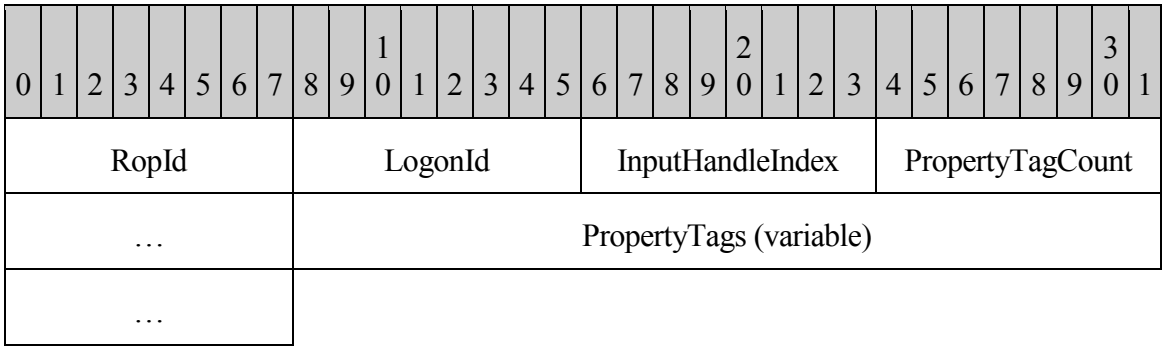
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.9 RopDeletePropertiesNoReplicate

This remote operation deletes property values from an object without invoking replication. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.9.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7A.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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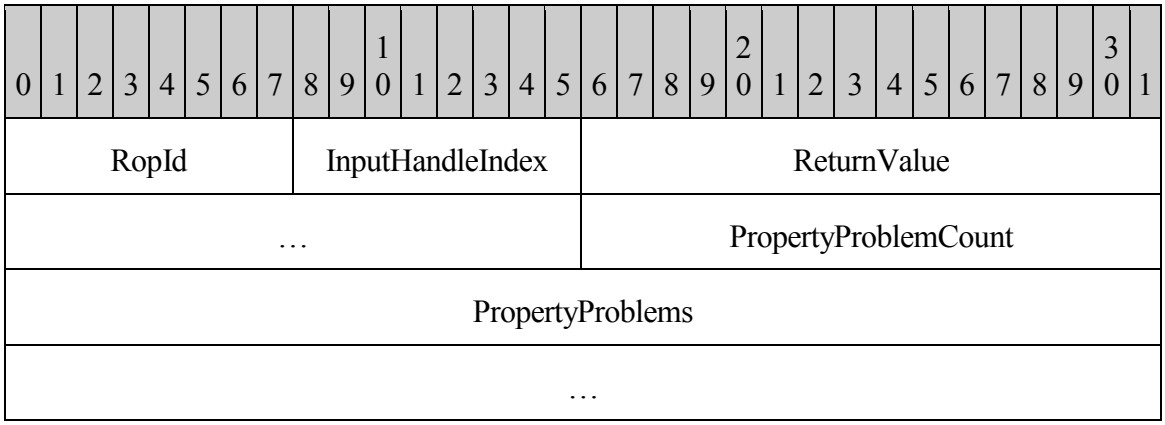
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyTag structures in the **PropertyTags** field.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain the same number of values as specified in the **PropertyTagCount** field. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property values to be deleted from the object.

2.2.7.9.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7A.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyProblemCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyProblem structures in the **PropertyProblems** field.

PropertyProblems (variable): Array of **PropertyProblem** structures. This field MUST contain the same number of structures as specified in the **PropertyProblemCount** field. The format of the **PropertyProblem** structure is specified in [MS-OXCDATA].

2.2.7.9.3 Failure Response Buffer

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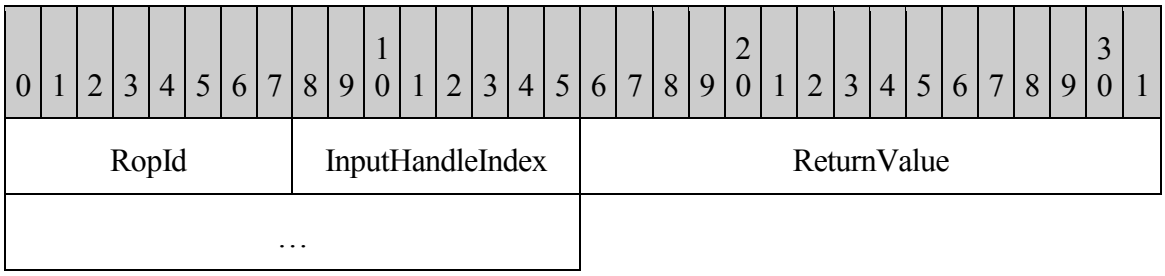


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7A.

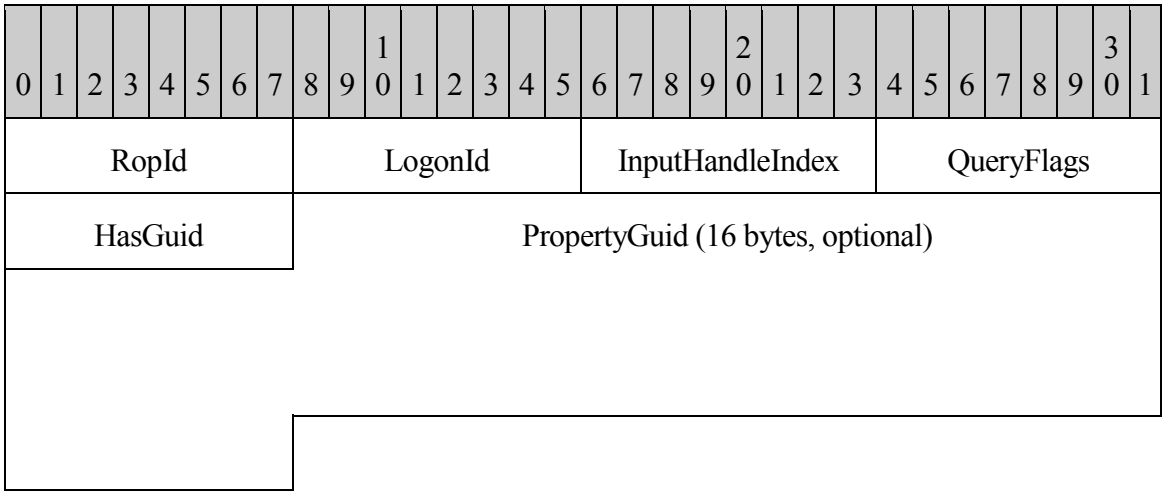
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.7.10 RopQueryNamedProperties

This remote operation retrieves all the named properties for an object. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.10.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5F.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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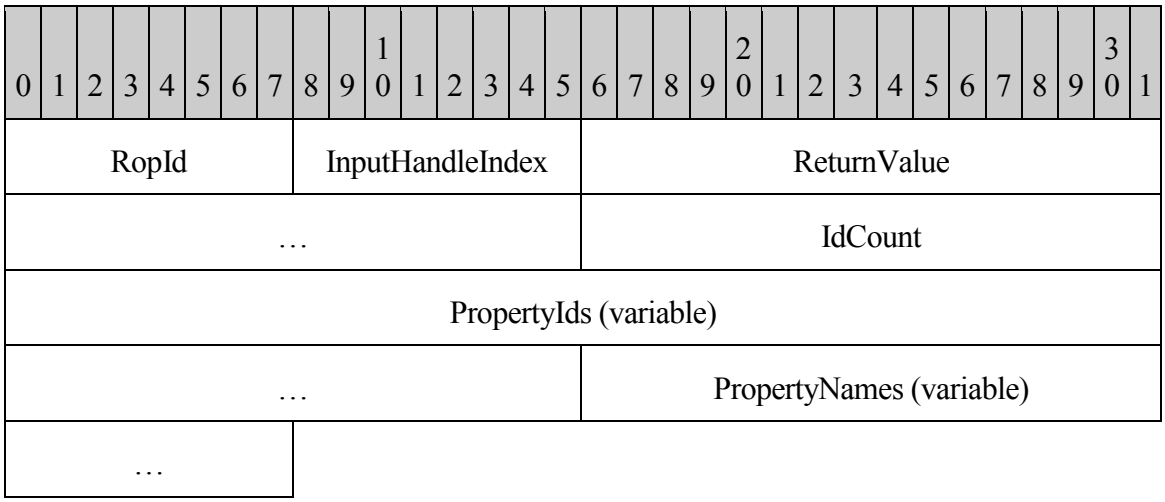
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

QueryFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCPRPT]. These flags control how this remote operation behaves.

HasGuid (1 byte): 8-bit Boolean. This value specifies whether the **PropertyGuid** field is present.

PropertyGuid (16 bytes, optional): 128-bit GUID. This field MUST be present if **HasGuid** is non-zero and MUST NOT be present if the value of the **HasGuid** field is zero. This value specifies the subset of named properties to be returned.

2.2.7.10.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5F.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000 or 0x00040380.

IdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of Ids in the **PropertyIds** and **PropertyNames** fields.

PropertyIds (variable): Array of **PropertyId** structures. This field MUST contain the same number of structures as specified in the **IdCount** field. The format of the **PropertyId**

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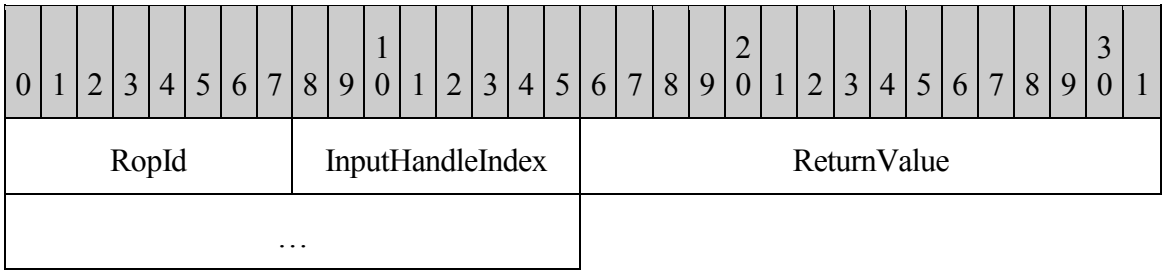
structure is specified in [MS-OXCDATA]. This field lists the property IDs for which property names are given.

PropertyNames (variable): List of **PropertyName** structures. This field MUST contain the same number of structures as specified in the **IdCount** field. The format of the **PropertyName** structure is specified in [MS-OXCDATA]. This field lists the property names for the property IDs specified in the **PropertyIds** field.

2.2.7.10.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5F.

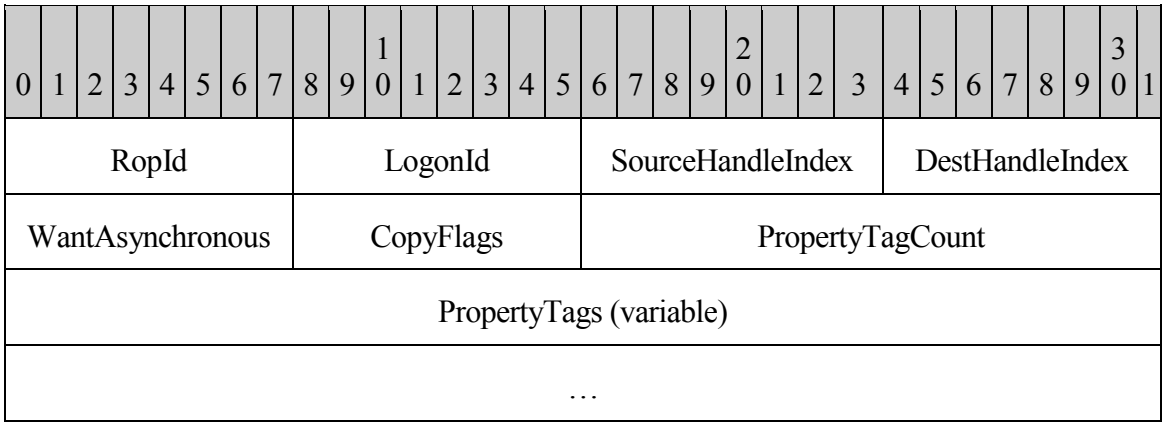
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000 or 0x00040380.

2.2.7.11 RopCopyProperties

This remote operation copies a property values from one object to another. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.11.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x67.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the source Server Object is stored. More information about Server Objects can be found in section 3.

DestHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the destination Server Object is stored. More information about Server Objects can be found in section 3.

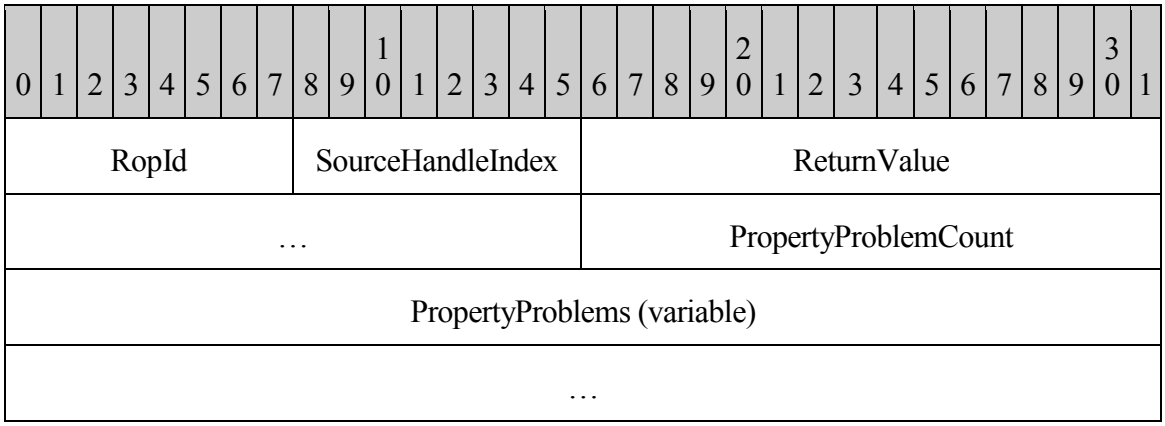
WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

CopyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCPRPT]. These flags control the operation behavior.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies how many tags are present in **PropertyTags**.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain **PropertyTagCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the properties to copy.

2.2.7.11.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x67.

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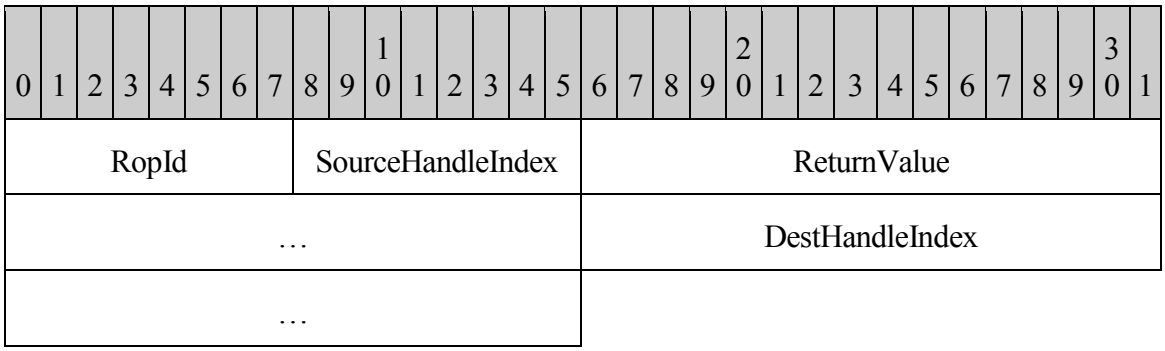
SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** value specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyProblemCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyProblem structures in the **PropertyProblems** field.

PropertyProblems (variable): Array of **PropertyProblem** structures. This field MUST contain the same number of structures as specified in the **PropertyProblemCount** field. The format of the **PropertyProblem** structure is specified in [MS-OXCDATA].

2.2.7.11.3 Null Destination Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x67.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000503.

DestHandleIndex (4 bytes): Unsigned 32-bit integer. This index MUST be set to the **DestHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

2.2.7.11.4 Failure Response Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								SourceHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x67.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000 or 0x00000503.

2.2.7.12 RopCopyTo

This remote operation copies properties from one server object to another. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.12.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								SourceHandleIndex								DestHandleIndex							
WantAsynchronous								WantSubObjects								CopyFlags								ExcludedTagCount							
…								ExcludedTags (variable)																									
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x39.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the source Server Object is stored. More information about Server Objects can be found in section 3.

DestHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the destination Server Object is stored. More information about Server Objects can be found in section 3.

WantAsynchronous (1 byte): 8-bit Boolean. This value specifies whether the operation is to be executed asynchronously with status reported via **RopProgress**.

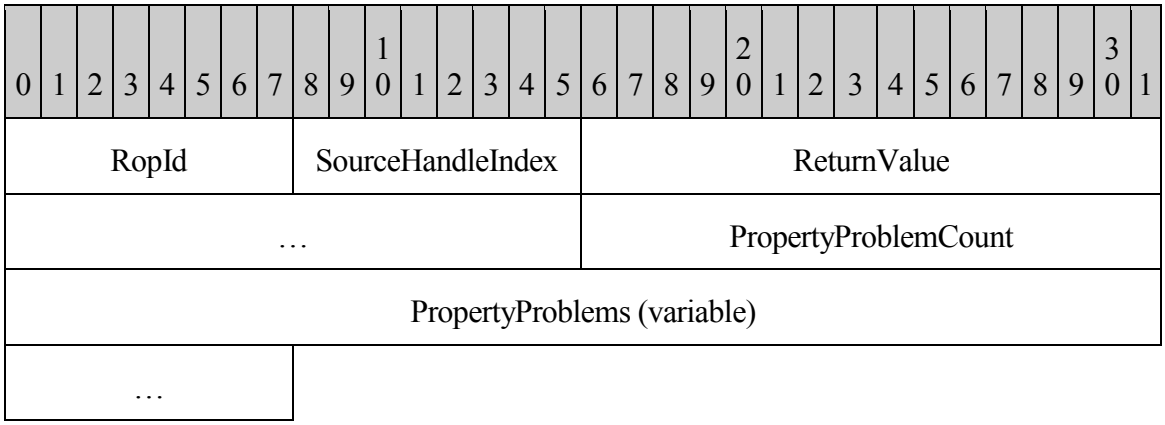
WantSubObjects (1 byte): 8-bit Boolean. This value specifies whether to copy sub-objects.

CopyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCPRPT]. These flags control the operation behavior.

ExcludedTagCount (2 bytes): Unsigned 16-bit integer. This value specifies how many tags are present in **ExcludedTags**.

ExcludedTags (variable): Array of **PropertyTag** structures. This field MUST contain **ExcludedTagCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the properties to exclude from the copy.

2.2.7.12.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x39.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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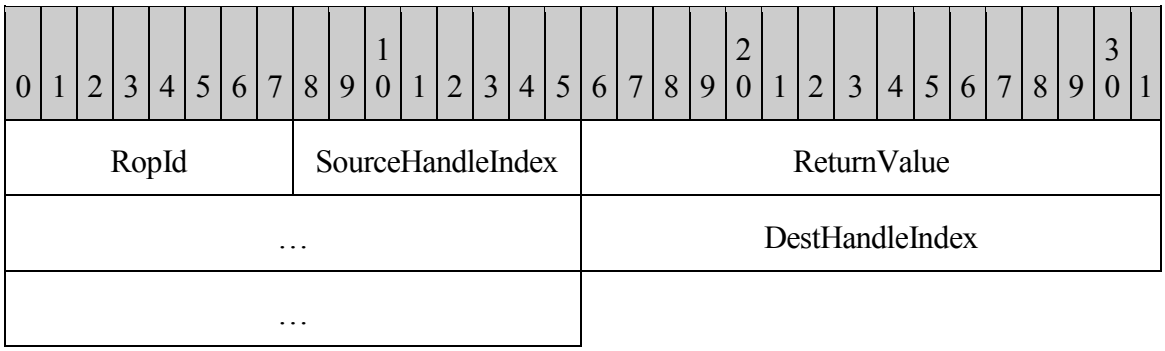
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

PropertyProblemCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of PropertyProblem structures in the **PropertyProblems** field.

PropertyProblems (variable): Array of **PropertyProblem** structures. This field MUST contain the same number of structures as specified in the **PropertyProblemCount** field. The format of the **PropertyProblem** structure is specified in [MS-OXCDATA].

2.2.7.12.3 Null Destination Failure Response Buffer



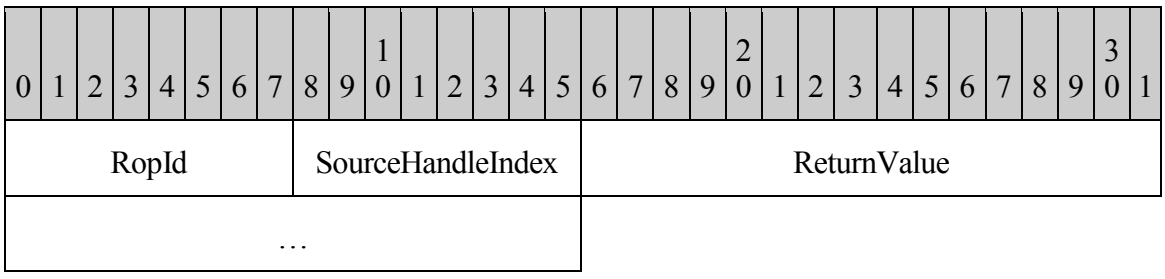
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x39.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000503.

DestHandleIndex (4 bytes): Unsigned 32-bit integer. This index MUST be set to the **DestHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

2.2.7.12.4 Failure Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x39.

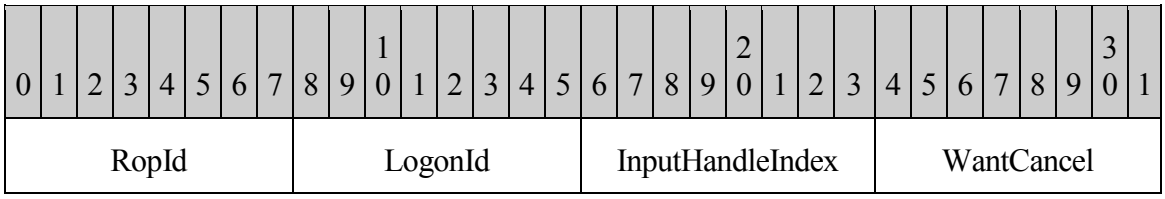
SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000 or 0x00000503.

2.2.7.13 RopProgress

This remote operation gets the status of an asynchronous operation. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.7.13.1 Request Buffer



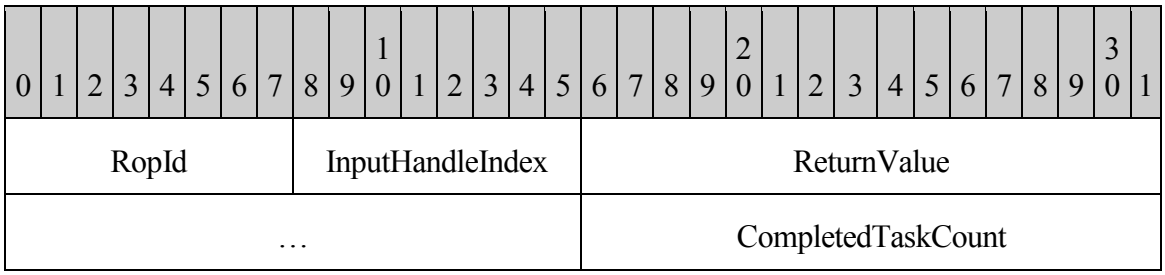
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x50.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

WantCancel (1 byte): 8-bit Boolean. This value specifies whether to cancel the operation.

2.2.7.13.2 Success Response Buffer



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…	TotalTaskCount
…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x50.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

CompletedTaskCount (4 bytes): Unsigned 32-bit integer. This value specifies the number of tasks completed.

TotalTaskCount (4 bytes): Unsigned 32-bit integer. This value specifies the total number of tasks.

2.2.7.13.3 Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x50.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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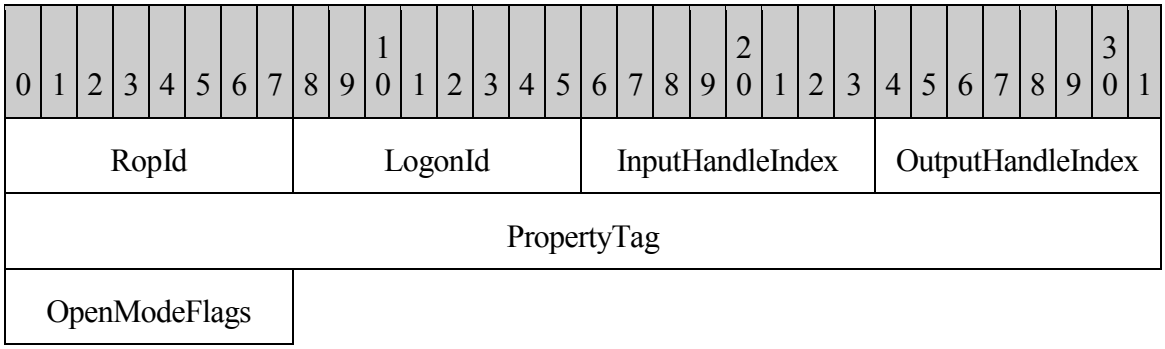
2.2.8 Stream ROPs

2.2.8.1 RopOpenStream

This remote operation opens a property for streaming access. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2B.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

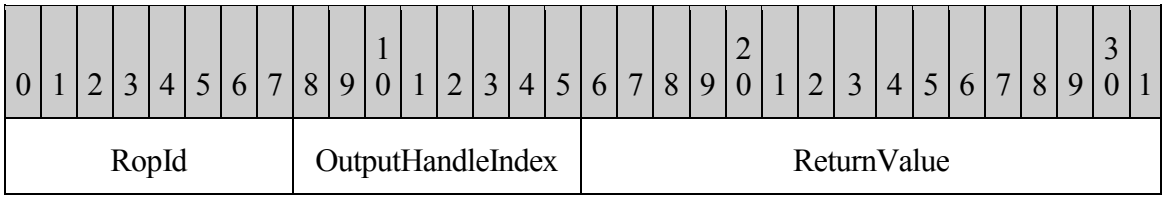
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

PropertyTag (4 bytes): PropertyTag structure. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This structure specifies the property of the object to stream.

OpenModeFlags (1 byte): 8-bit flags structure. These flags control how the stream is opened. The possible values are specified in [MS-OXCPRPT].

2.2.8.1.2 Success Response Buffer



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…	StreamSize
..	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2B.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

StreamSize (4 bytes): Unsigned 32-bit integer. This value indicates the size of the stream opened.

2.2.8.1.3 Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								OutputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2B.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.8.2 RopReadStream

This remote operation reads bytes from a stream. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.2.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								InputHandleIndex								ByteCount							
…								MaximumByteCount (optional)																							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2C.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

ByteCount (2 bytes): Unsigned 16-bit integer. The value of this field specifies the maximum number of bytes to read if the value is not equal to 0xBABE; the **MaximumByteCount** field specifies the maximum number of bytes to read if the value of **ByteCount** is equal to 0xBABE.

MaximumByteCount (4 bytes, optional): Unsigned 32-bit integer. This value specifies the maximum number of bytes to read if the value of the **ByteCount** field is equal to 0xBABE. The **MaximumByteCount** field MUST be present when **ByteCount** is equal to 0xBABE and MUST NOT be present otherwise. If **MaximumByteCount** is greater than 0x80000000, then the RPC call SHOULD fail with error code 0x000004B6.

2.2.8.2.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								InputHandleIndex								ReturnValue															
…																DataSize															
Data (variable)																															
…																															

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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2C.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

DataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size, in bytes, of the **Data** field. The maximum size is specified in the request buffer by one of the following:

- The **ByteCount** field, when the value of **ByteCount** is not equal to 0xBABE.
- The **MaximumByteCount** field, when the value of **ByteCount** is equal to 0xBABE.

Data (variable): Array of bytes. These values are the bytes read from the stream. This field MUST contain the same number of bytes as specified in **DataSize**.

2.2.8.3 RopWriteStream

This remote operation writes bytes to a stream. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.3.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								InputHandleIndex								DataSize							
…								Data (variable)																							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2D.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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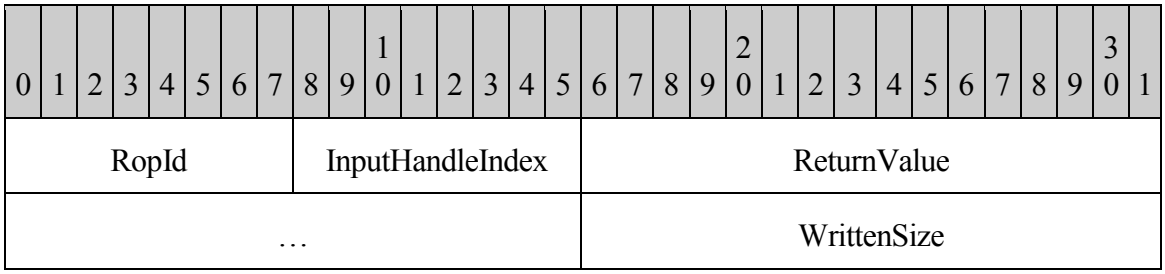
DataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **Data** field.

Data (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **DataSize**. These values specify the bytes to be written to the stream.

2.2.8.3.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2D.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

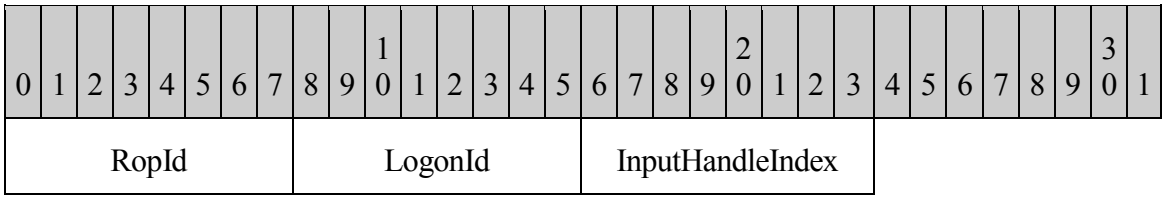
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

WrittenSize (2 bytes): Unsigned 16-bit integer. This value specifies the number of bytes actually written.

2.2.8.4 RopCommitStream

This remote operation commits stream operations. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.4.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5D.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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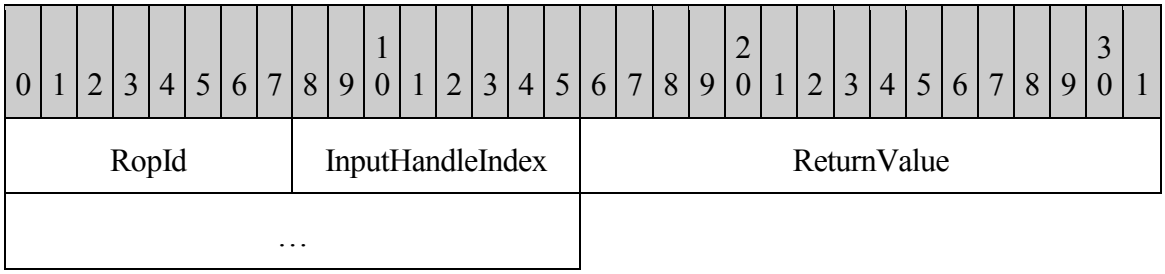
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.8.4.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5D.

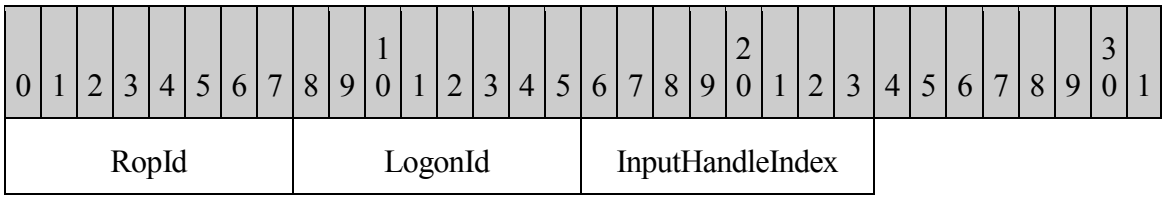
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.8.5 RopGetStreamSize

This remote operation gets the size of a stream. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.5.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5E.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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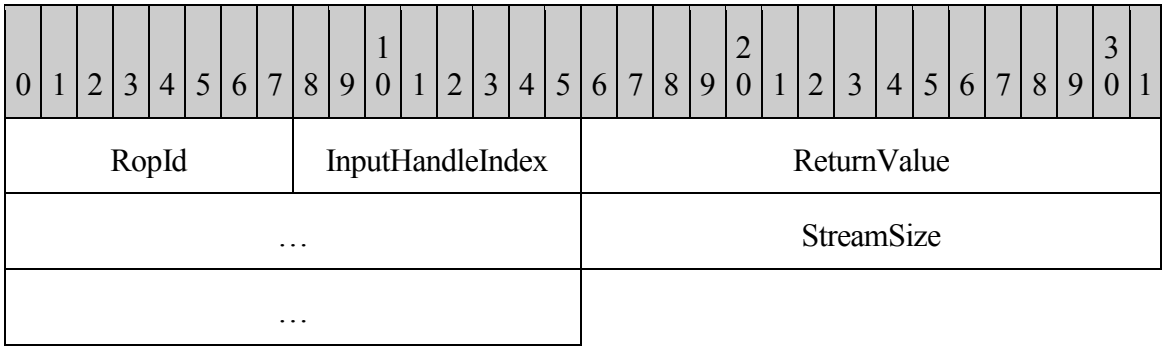
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.8.5.2 Success Response Buffer



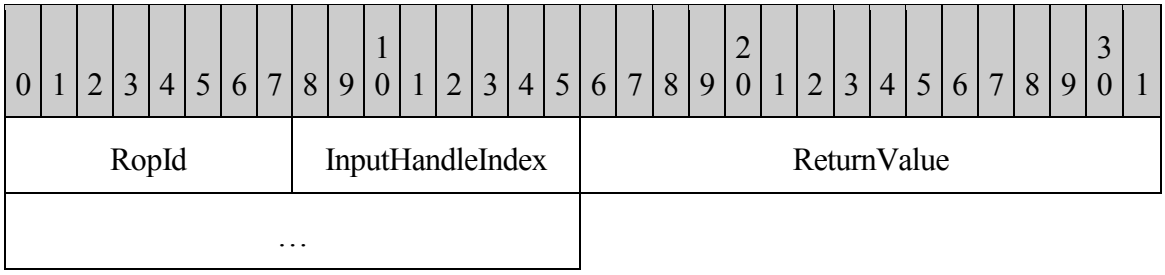
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5E.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

StreamSize (4 bytes): Unsigned 32-bit integer. This value is the current size of the stream.

2.2.8.5.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x5E.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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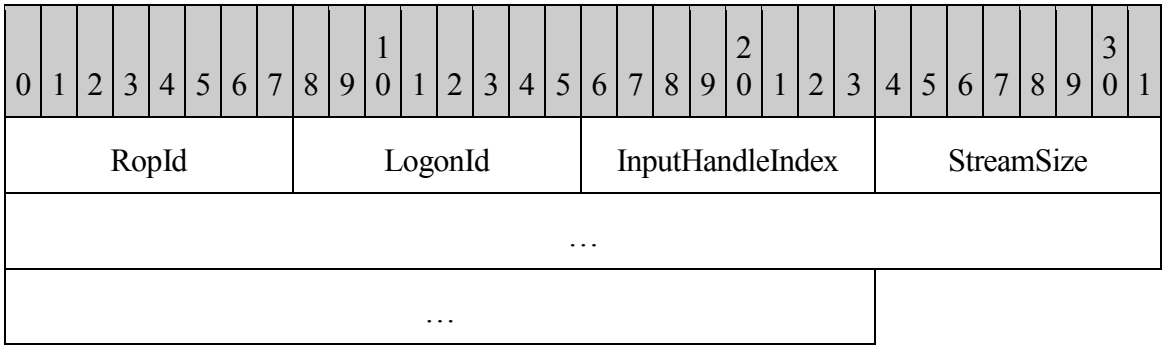
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.8.6 RopSetStreamSize

This remote operation sets the size of a stream. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.6.1 Request Buffer



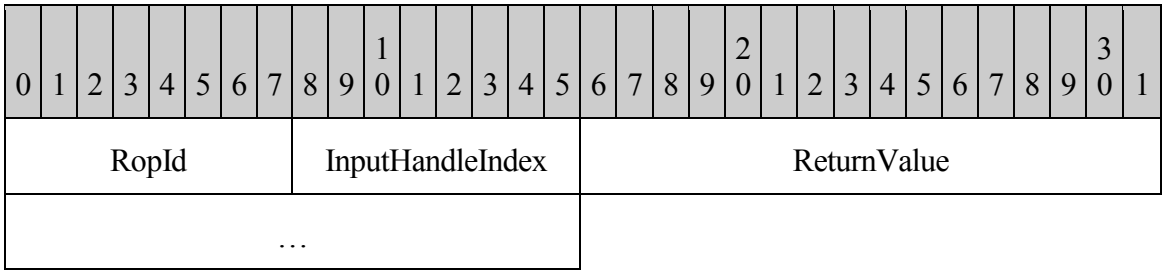
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2F.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

StreamSize (8 bytes): Unsigned 64-bit integer. This value specifies the size of the stream. The server MAY <2> limit the maximum size of the stream.

2.2.8.6.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2F.

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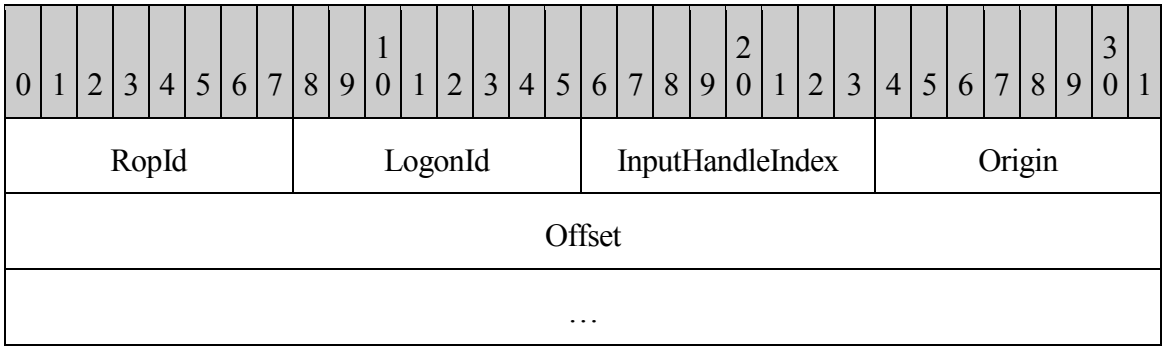
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.8.7 RopSeekStream

This remote operation seeks to a specific offset within a stream. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.7.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2E.

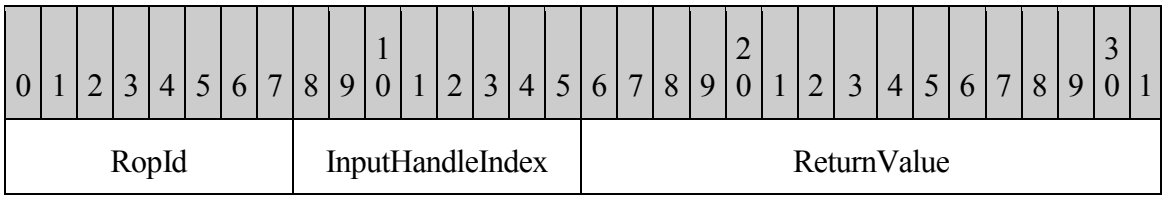
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Origin (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCPRPT]. This value specifies the origin location for the seek operation.

Offset (8 bytes): 64-bit integer. This value specifies the seek offset.

2.2.8.7.2 Success Response Buffer



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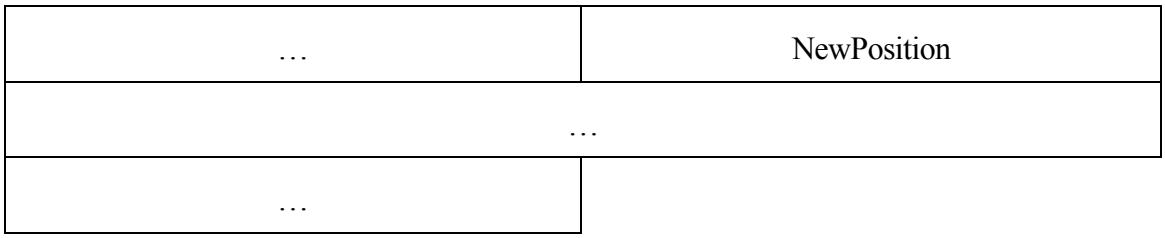


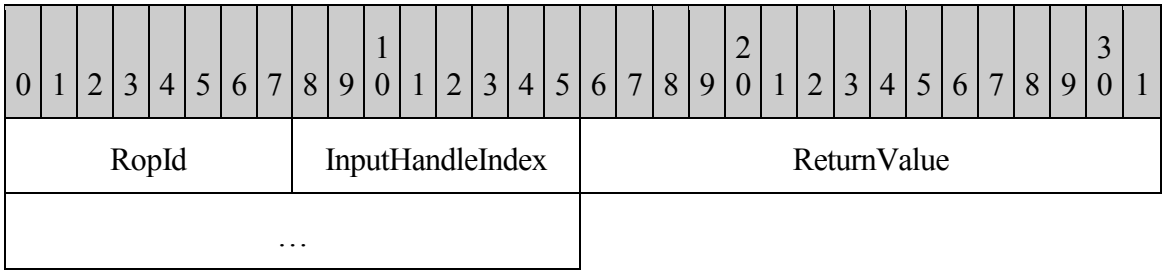
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2E.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

NewPosition (8 bytes): Unsigned 64-bit integer. This value represents the new position after the operation.

2.2.8.7.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2E.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.8.8 RopCopyToStream

This remote operation copies a number of bytes from a source stream to another destination stream. More detailed information about this operation can be found in [MS-OXCPRPT].

2.2.8.8.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								SourceHandleIndex								DestHandleIndex							
ByteCount																															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3A.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the source Server Object is stored. More information about Server Objects can be found in section 3.

DestHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the destination Server Object is stored. More information about Server Objects can be found in section 3.

ByteCount (8 bytes): Unsigned 64-bit integer. This value specifies the number of bytes to be copied.

2.2.8.8.2 Null Destination Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								SourceHandleIndex								ReturnValue															
…																DestHandleIndex															
…																ReadByteCount															
…																															
…																WrittenByteCount															
…																															

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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3A.

SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000503.

DestHandleIndex (4 bytes): Unsigned 32-bit integer. This index MUST be set to the **DestHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReadByteCount (8 bytes): Unsigned 64-bit integer. This value specifies the number of bytes read from the source object and for this result SHOULD be 0x0000000000000000.

WrittenByteCount (8 bytes): Unsigned 64-bit integer. This value specifies the number of bytes written to the destination object and for this result SHOULD be 0x0000000000000000.

2.2.8.8.3 Success or Other Failure Response Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								SourceHandleIndex								ReturnValue															
…																ReadByteCount															
…																															
…																WrittenByteCount															
…																															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3A.

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SourceHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **SourceHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000503.

ReadByteCount (8 bytes): Unsigned 64-bit integer. This value specifies the number of bytes read from the source object.

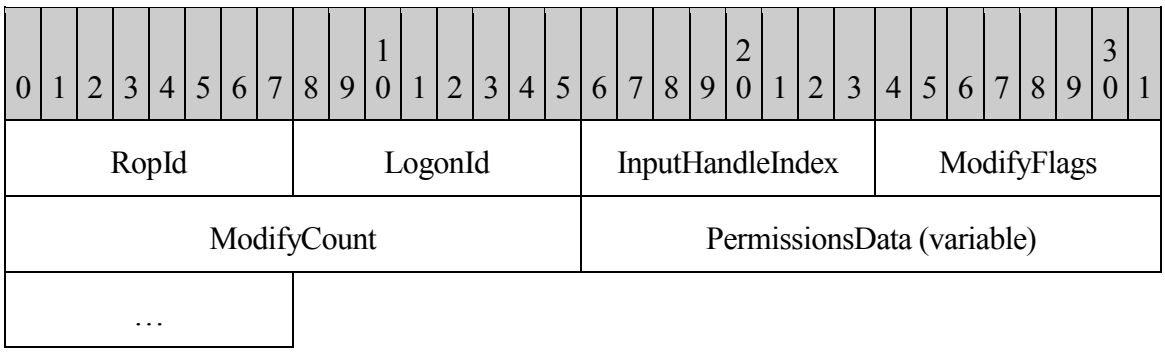
WrittenByteCount (8 bytes): Unsigned 64-bit integer. This value specifies the number of bytes written to the destination object.

2.2.9 Permission ROPs

2.2.9.1 RopModifyPermissions

This remote operation modifies the permissions associated with a folder. More detailed information about this operation can be found in [MS-OXCPERM].

2.2.9.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x40.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

ModifyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCPERM]. These flags control behavior of this operation.

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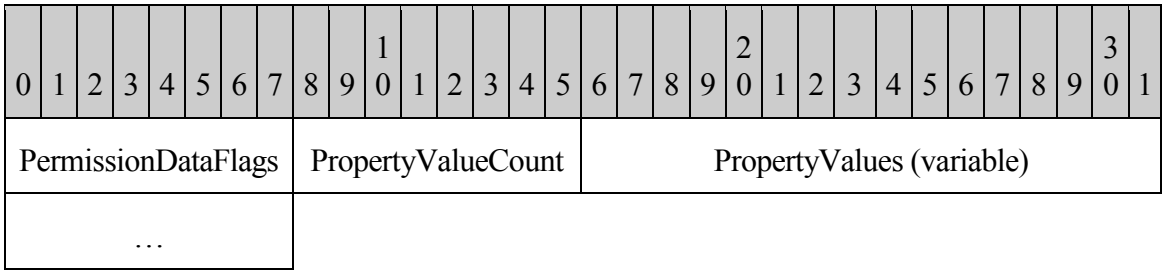
ModifyCount (2 bytes): Unsigned 16-bit integer. This count specifies the number of structures serialized in the **RuleData** array.

PermissionsData (variable): A list of **PermissionData** structures. This list MUST contain the same number of structures as specified in the **ModifyCount** field. The format of the **PermissionData** structure is specified in section 2.2.9.1.1.1.

2.2.9.1.1.1 PermissionData Structure

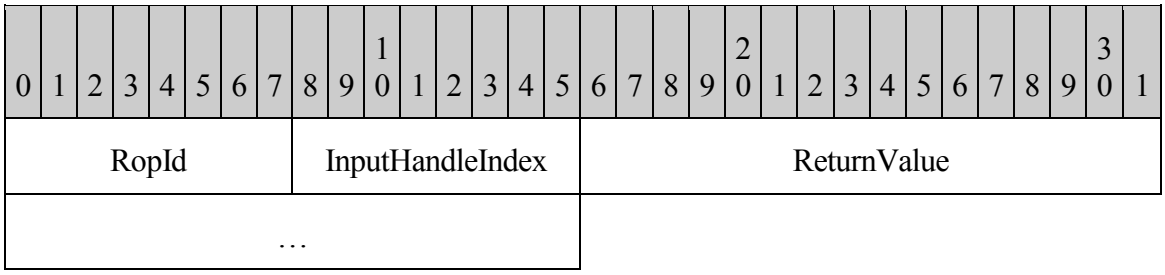


PermissionDataFlags: (1 byte): 8-bit flag structure. This field is used to specify the type of operation.

PropertyValueCount (1 byte): Unsigned 8-bit integer. This value specifies the number of value structures in **PropertyValues**.

PropertyValues (variable): Array of **PropertyValue** structures. This field MUST contain the same number of structures as specified in the **PropertyValueCount** field. The format of the **PropertyValue** structure is specified in [MS-OXCDATA]. These values are used to specify and describe the modify operations.

2.2.9.1.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x40.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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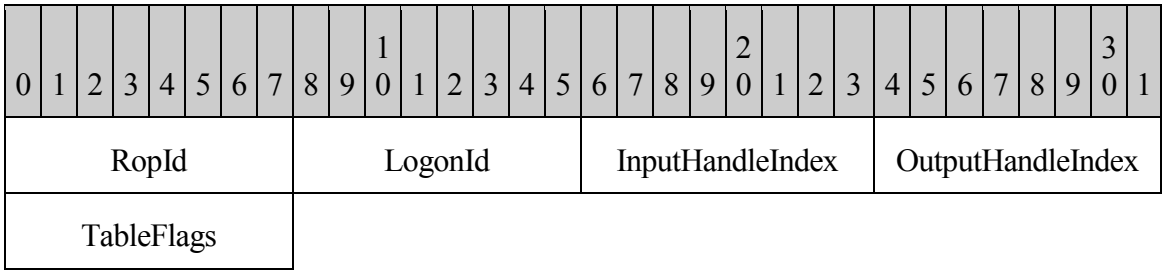
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.9.2 RopGetPermissionsTable

This remote operation gets the permissions table for a folder. More detailed information about this operation can be found in [MS-OXCPERM].

2.2.9.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3E.

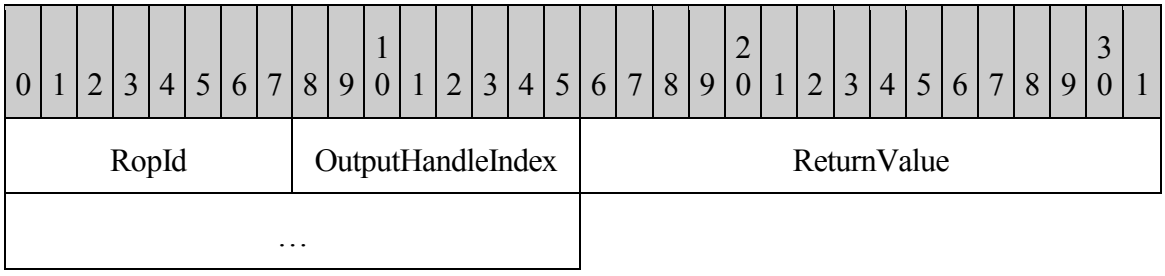
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

TableFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCPERM]. These flags control the type of table.

2.2.9.2.2 Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3E.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

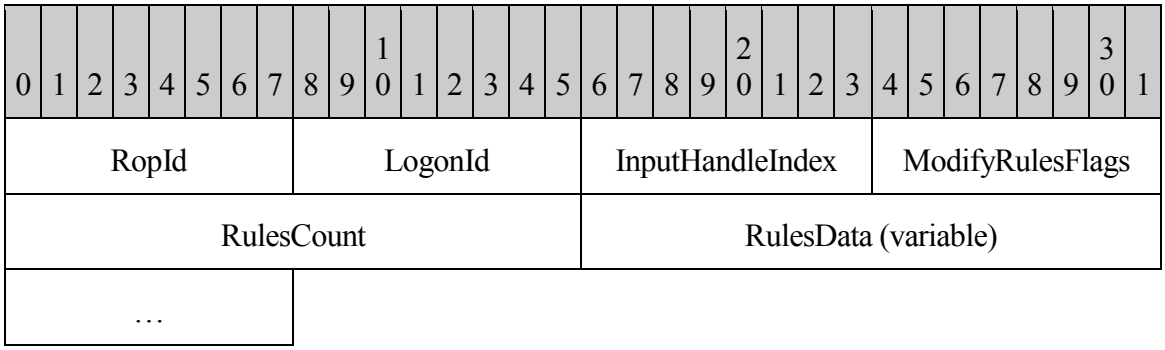
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.10 Rule ROPs

2.2.10.1 RopModifyRules

This remote operation modifies the rules associated with a folder. More detailed information about this operation can be found in [MS-OXORULE].

2.2.10.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x41.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon on which the operation is performed.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the handle in the Server Object Handle Table used as input for this operation. More information about Server Objects can be found in section 3.

ModifyRulesFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXORULE]. These flags specify behavior of this operation.

RulesCount (2 bytes): Unsigned 16-bit integer. This count specifies the number of structures serialized in the **RuleData** array.

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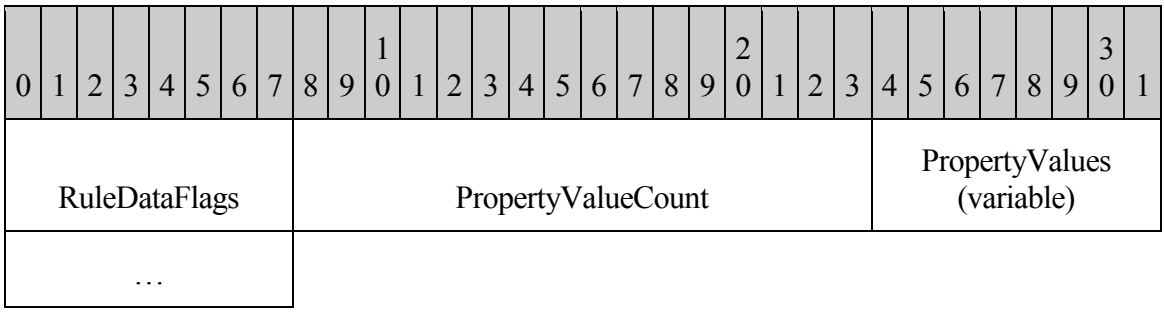
RulesData (variable): A list of **RuleData** structures. This list MUST contain the same number of structures as specified in the **RulesCount** field. The format of the **RuleData** structure is specified in section 2.2.10.1.1.1.

2.2.10.1.1.1 RuleData Structure

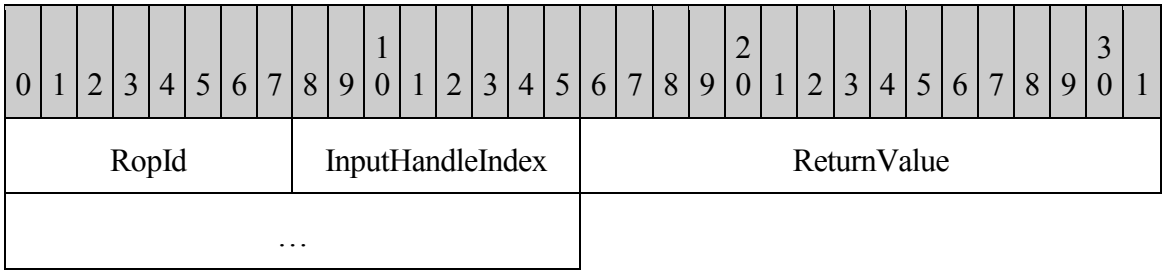


RuleDataFlags: (1 byte): 8-bit flag structure. This field is used to specify the type of operation.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of value structures in **PropertyValues**.

PropertyValues (variable): Array of **PropertyValue** structures. This field MUST contain the same number of structures as specified in the **PropertyValueCount** field. The format of the **PropertyValue** structure is specified in [MS-OXCDATA]. These values are used to specify and describe the rule operations.

2.2.10.1.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x41.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the handle in the Server Object Handle Table used as input for this operation. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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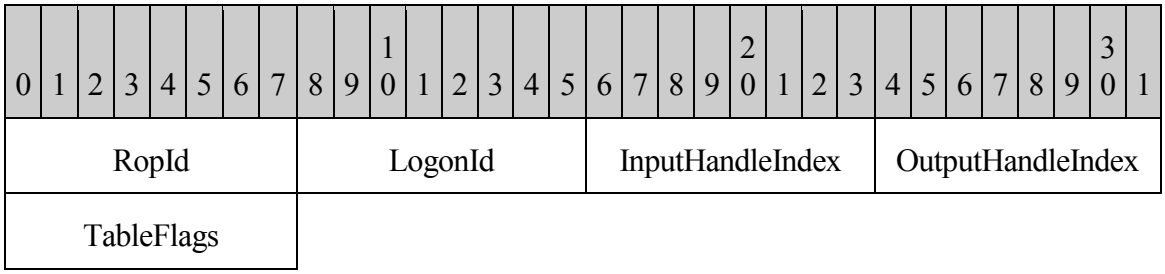
2.2.10.2 RopGetRulesTable

This remote operation gets the rules table of a folder. More detailed information about this operation can be found in [MS-OXORULE].

2.2.10.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3F.

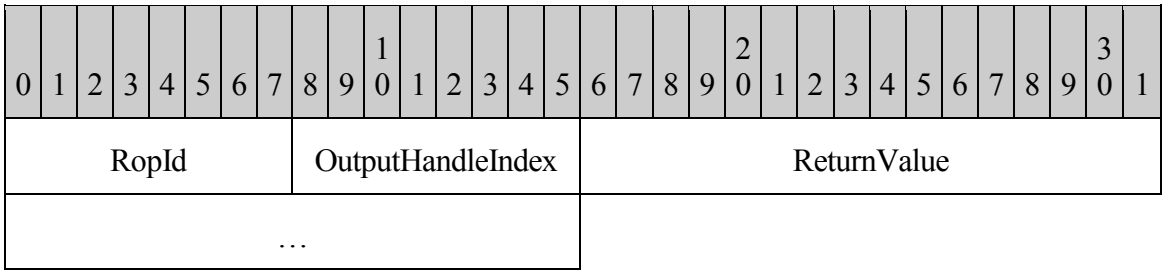
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon on which the operation is performed.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the location in the Server Object Handle Table used to find the handle for this operation. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the location in the Server Object Handle Table used to store the output handle. More information about Server Objects can be found in section 3.

TableFlags (1 byte): 8-bit flags structure. These flags control the type of table. The possible values are specified in [MS-OXORULE].

2.2.10.2.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x3F.

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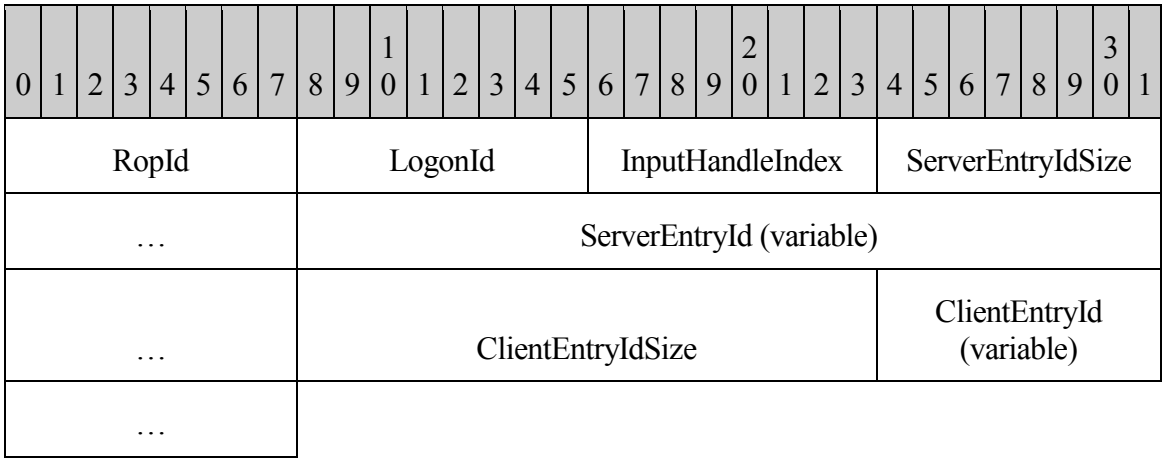
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the handle in the Server Object Handle Table specified. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.10.3 RopUpdateDeferredActionMessages

This remote operation updates the Entry IDs in the deferred action messages. More detailed information about this operation can be found in [MS-OXORULE].

2.2.10.3.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x57.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon on which the operation is performed.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the location in the Server Object Handle Table used to find the handle for this operation. More information about Server Objects can be found in section 3.

ServerEntryIdSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **ServerEntryId**.

ServerEntryId (variable): Byte Array. This field MUST contain the same number of bytes as specified in the **ServerEntryIdSize** field. This value specifies the ID of the message on the server.

ClientEntryIdSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **ClientEntryId**.

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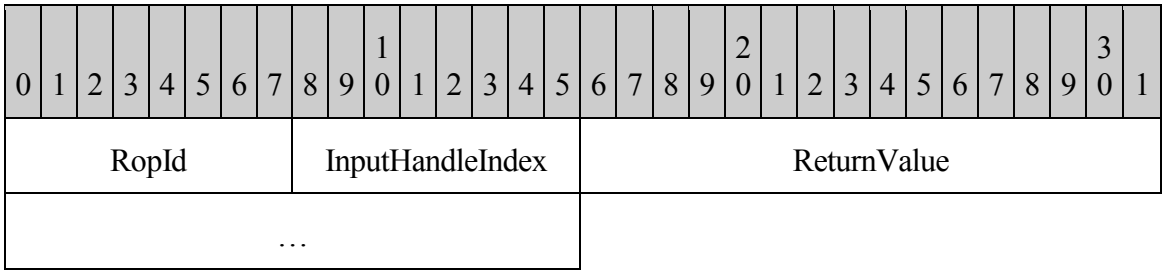
ClientEntryId (variable): Byte Array. This field MUST contain the same number of bytes as specified in the **ClientEntryIdSize** field. This value specifies the ID of the downloaded message on the client.

2.2.10.3.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x57.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index refers to the handle in the Server Object Handle Table specified as the input handle. More information about Server Objects can be found in section 3.

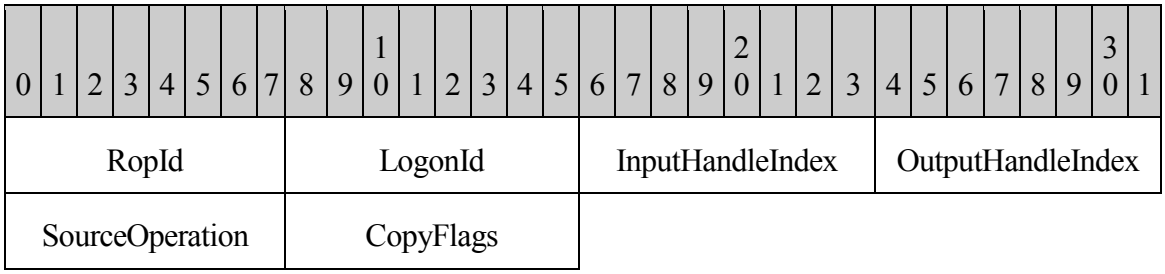
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.11 Fast Transfer ROPs

2.2.11.1 RopFastTransferDestinationConfigure

This remote operation creates a destination fast transfer object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.1.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x53.

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LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

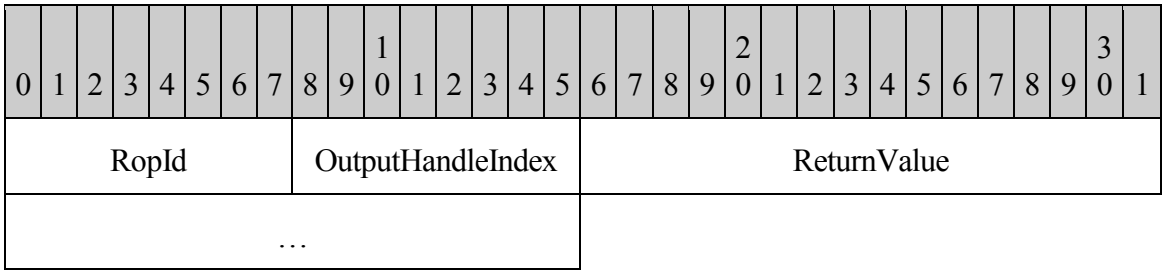
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

SourceOperation (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCFXICS]. This enumeration is used to indicate how the data stream was created on the source.

CopyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the behavior of the transfer operation.

2.2.11.1.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x53.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.11.2 RopFastTransferDestinationPutBuffer

This remote operation sends a stream of data to a fast transfer destination object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.2.1 Request Buffer

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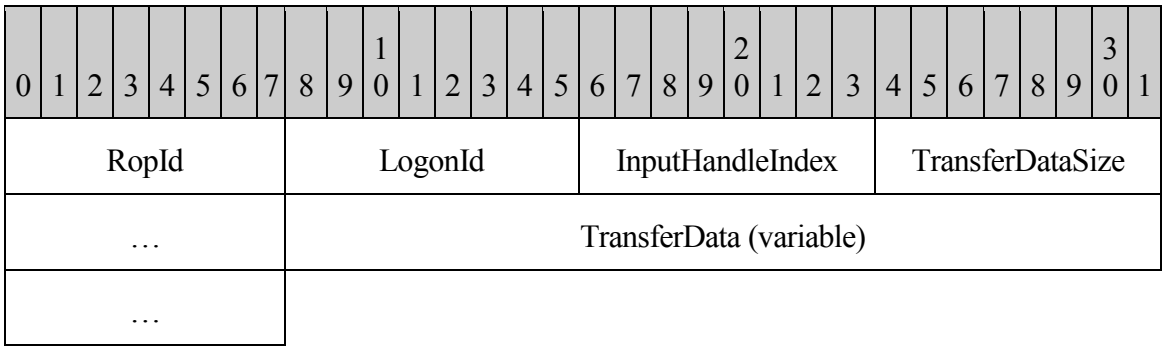


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x54.

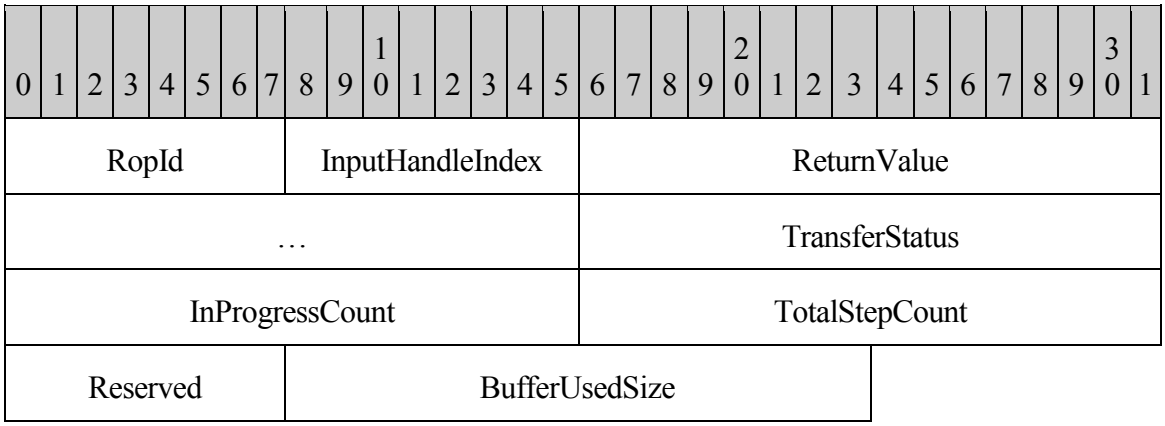
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

TransferDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **TransferData** field.

TransferData (variable): Array of bytes. This field MUST contain the same number of bytes as specified in the **TransferDataSize** field. This array contains the data to be uploaded to the destination fast transfer object.

2.2.11.2.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x54.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

TransferStatus (2 bytes): 16-bit enumeration. The possible values for this enumeration are specified in [MS-OXCFXICS]. This value specifies the current status of the transfer.

InProgressCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of steps that have been completed in the current operation.

TotalStepCount (2 bytes): Unsigned 16-bit integer. This value specifies the approximate total number of steps to be completed in the current operation.

Reserved (1 byte): Reserved. The server MUST specify 0x00 for this value.

BufferUsedSize (2 bytes): Unsigned 16-bit integer. This value is the buffer size that was used.

2.2.11.3 RopFastTransferSourceGetBuffer

This remote operation retrieves a stream of data from a fast transfer source object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.3.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								InputHandleIndex								BufferSize							
…								MaximumBufferSize (optional)																							

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4E.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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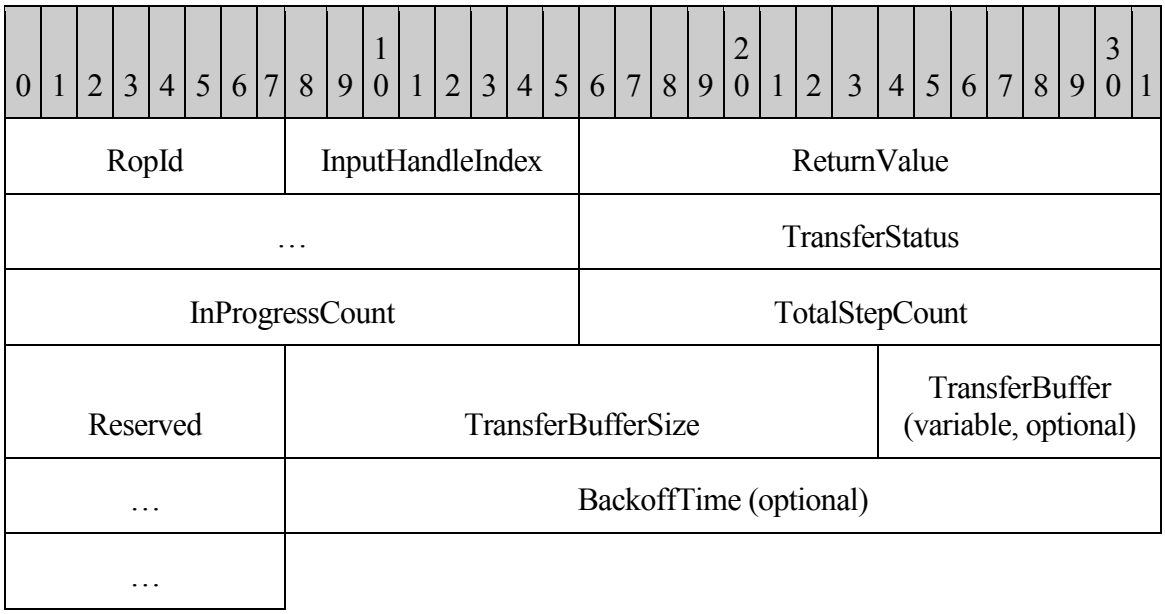
BufferSize (2 bytes): Unsigned 16-bit integer. This value specifies the buffer size requested.

MaximumBufferSize (2 bytes, optional): Unsigned 16-bit integer. This field MUST be present when **BufferSize** is specified as 0xBABE. This value specifies the maximum size limit when the server determines the buffer size.

2.2.11.3.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4E.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

TransferStatus (2 bytes): 16-bit enumeration. The possible values for this enumeration are specified in [MS-OXCFXICS]. This value specifies the current status of the transfer.

InProgressCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of steps that have been completed in the current operation.

TotalStepCount (2 bytes): Unsigned 16-bit integer. This value specifies the approximate number of steps to be completed in the current operation.

Reserved (1 byte): Reserved. The server MUST specify 0x00 for this value.

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TransferBufferSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **TransferBuffer** field.

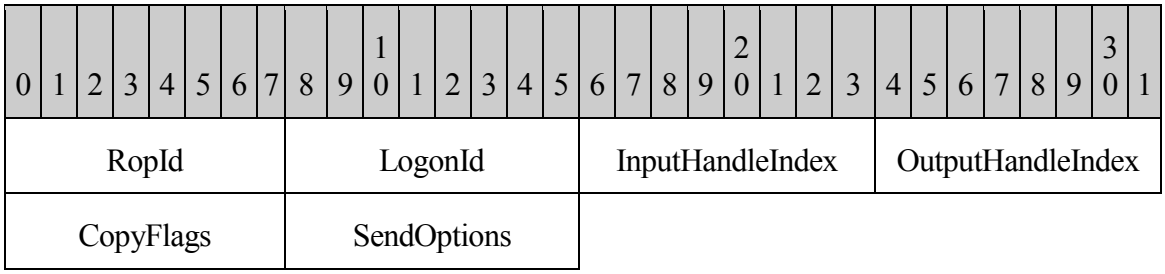
TransferBuffer (variable, optional): Array of bytes. This field MUST be present if the **ReturnValue** is not 0x00000480 and must not be present otherwise. If present, this field MUST contain the same number of bytes as specified in the **TransferBufferSize** field.

BackoffTime (4 bytes, optional): Unsigned 32-bit integer. This field MUST be present if the **ReturnValue** is 0x00000480 and must not be present otherwise. This value specifies the number of milliseconds for the client to wait before trying this operation again.

2.2.11.4 RopFastTransferSourceCopyFolder

This remote operation moves or copies a source folder to a fast transfer object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.4.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4C.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

CopyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the type of operation.

SendOptions (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These values control the behavior of the operation.

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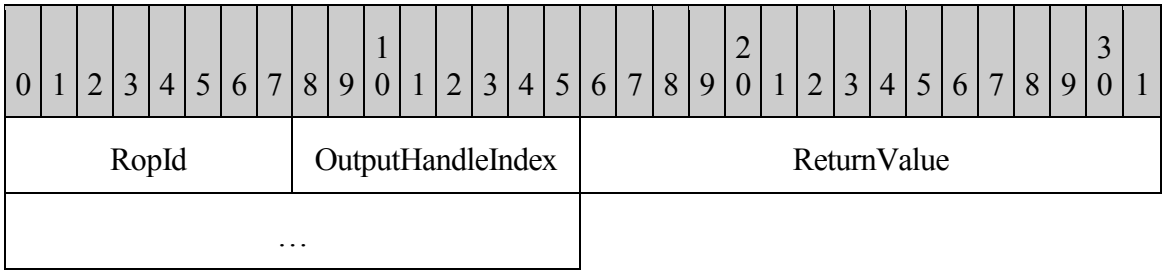
2.2.11.4.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4C.

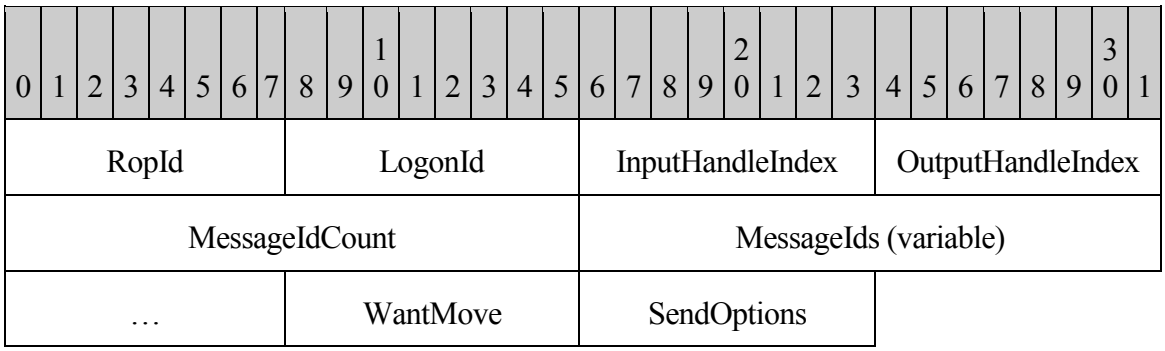
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.11.5 RopFastTransferSourceCopyMessages

This remote operation copies messages from a source folder to a fast transfer object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.5.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4B.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

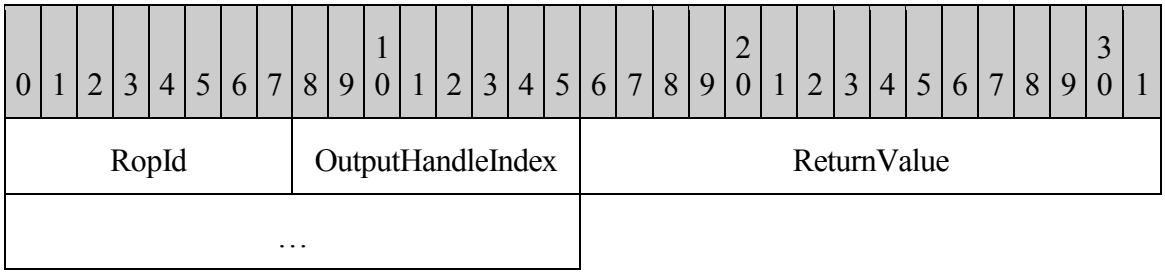
MessageIdCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of identifiers in the **MessageIds** field.

MessageIds (variable): Array of 64-bit identifiers. This array MUST contain the same number of identifiers as specified in the **MessageIdCount** field. This list specifies the messages to copy.

CopyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These values control the type of operation.

SendOptions (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These values control the behavior of the operation.

2.2.11.5.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4B.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.11.6 RopFastTransferSourceCopyTo

This remote operation copies properties from a source folder to a fast transfer object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.6.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								InputHandleIndex								OutputHandleIndex							
Level								CopyFlags																							
…								SendOptions								PropertyTagCount								PropertyTags (variable)							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4D.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

Level (1 byte): Unsigned 8-bit integer. This value specifies the level at which the copy is occurring.

CopyFlags (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the behavior of the transfer operation.

SendOptions (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These values control the behavior of the operation.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyTags** field.

PropertyTags (variable): Array of **PropertyTag** structures. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field MUST contain the same number of structures as specified in the **PropertyTagCount** field. This array specifies the properties to exclude during the copy.

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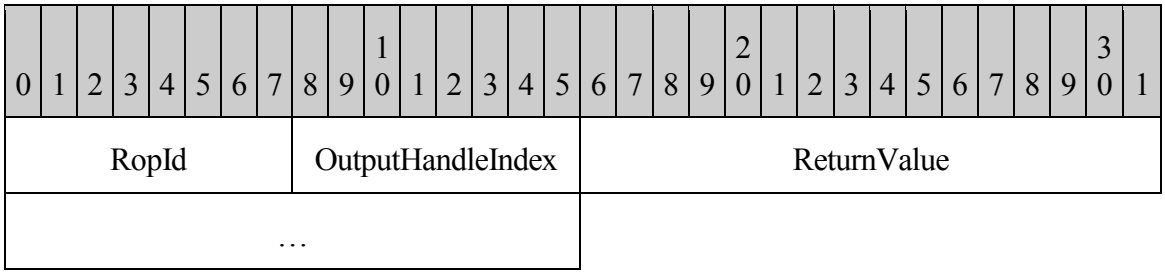
2.2.11.6.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x4D.

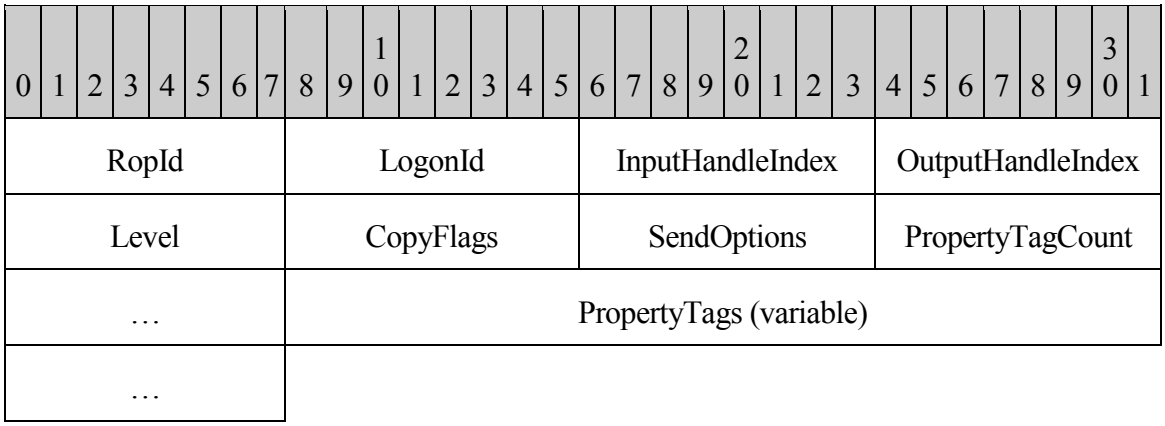
OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.11.7 RopFastTransferSourceCopyProperties

This remote operation copies properties from Message, Folder, or Attachment objects to a fast transfer object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.7.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x69.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

Level (1 byte): Unsigned 8-bit integer. This value specifies the level at which the copy is occurring.

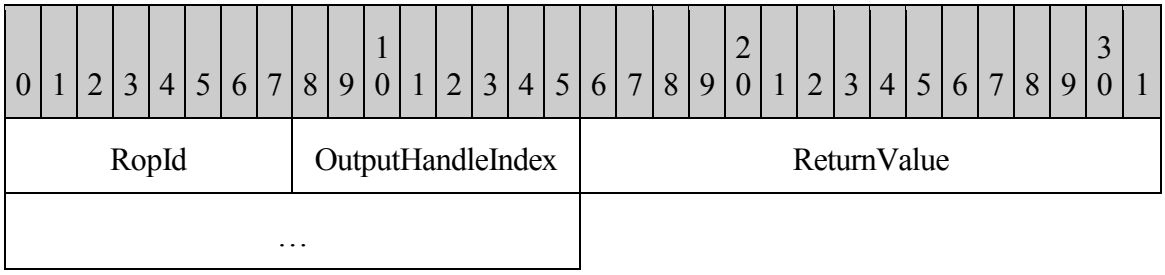
CopyFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the behavior of the transfer operation.

SendOptions (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These values control the behavior of the operation.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyTags** field.

PropertyTags (variable): Array of **PropertyTag** structures. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field MUST contain the same number of structures as specified in the **PropertyTagCount** field. This array specifies the properties to copy.

2.2.11.7.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x69.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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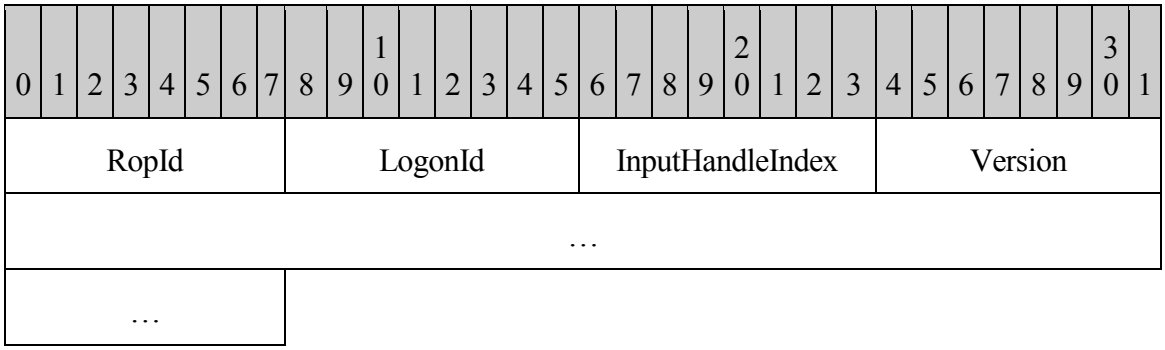
2.2.11.8 RopTellVersion

This remote operation provides the version of the other server in a server-to-server upload. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.11.8.1 Request Buffer



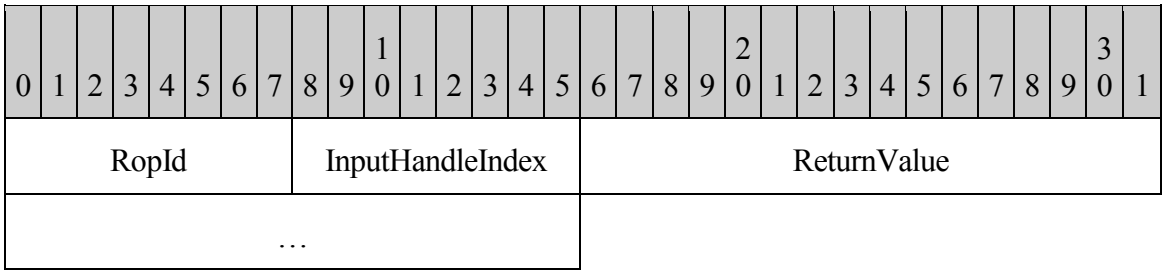
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x86.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

Version (6 bytes): Array of 3 unsigned 16-bit integers. This array contains the version information for the other server. The format of this structure is the same as that specified in section 3.1.9 in [MS-OXCRPC].

2.2.11.8.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x86.

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InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12 Incremental Change Synchronization ROPs

2.2.12.1 RopSynchronizationConfigure

This remote operation configures a synchronization object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.1.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								InputHandleIndex								OutputHandleIndex							
SynchronizationType								SendOptions								SynchronizationFlags															
RestrictionDataSize																RestrictionData (variable)															
…								SynchronizationExtraFlags																									
…								PropertyTagCount																PropertyTags (variable)							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x70.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

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SynchronizationType (1 byte): 8-bit enumeration. The possible values for this enumeration are specified in [MS-OXCFXICS]. This value controls the type of synchronization.

SendOptions (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These values control the behavior of the operation.

SynchronizationExtraFlags (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the behavior of the synchronization.

RestrictionDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the length of the **RestrictionData** field.

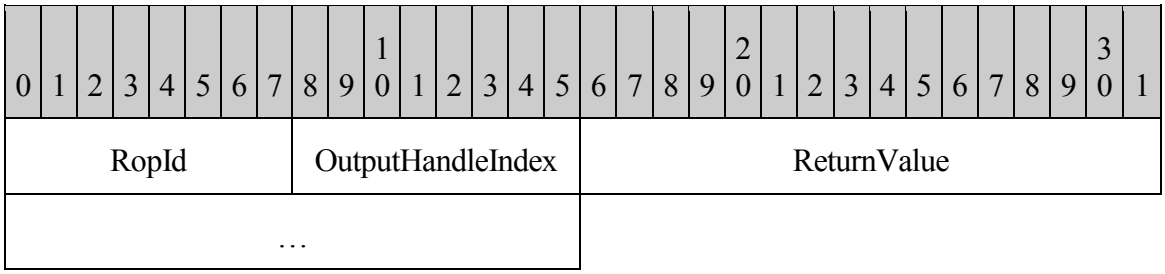
RestrictionData (variable): Restriction. This field MUST be **RestrictionDataSize** bytes long. The format of this field is specified in [MS-OXCDATA]. This value specifies the filter for this synchronization object.

AdditionalFlags (4 bytes): 32-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the additional behavior of the synchronization.

PropertyTagCount (2 bytes): Unsigned 16-bit integer. This value specifies how many tags are present in **PropertyTags**.

PropertyTags (variable): Array of **PropertyTag** structures. This field MUST contain **PropertyTagCount** tags. The format of the **PropertyTag** structure is specified in [MS-OXCDATA]. This field specifies the property tags to be used for the synchronization process.

2.2.12.1.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x70.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

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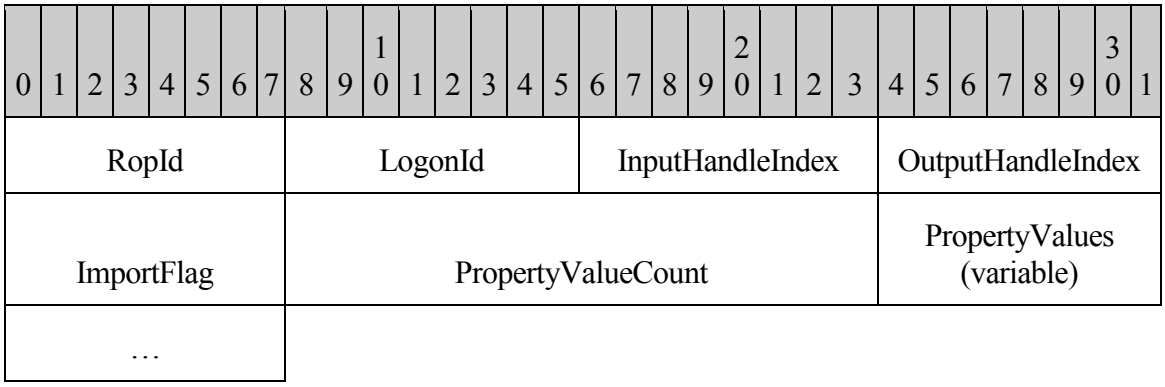
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.2 RopSynchronizationImportMessageChange

This remote operation synchronizes changes to a message. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.2.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x72.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

ImportFlag (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCFXICS]. These flags control the behavior of the synchronization.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyValues** field.

PropertyValues (variable): Array of **PropertyValue** structures. This field MUST contain the same number of structures as specified in the **PropertyValueCount** field. The format of the **PropertyValue** structure is specified in [MS-OXCDATA] and possible properties to be set are specified in [MS-OXCFXICS]. These values are used to specify some extra properties on the message.

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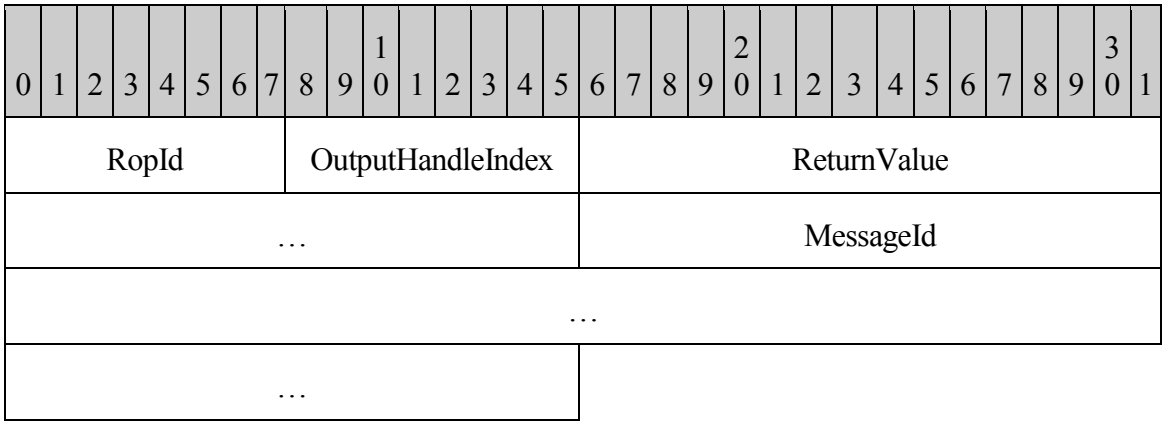
2.2.12.2.2 Success Response Buffer



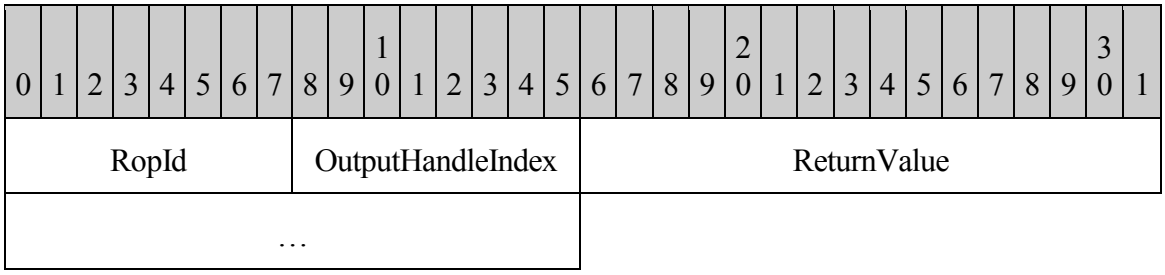
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x72.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

MessageId (8 bytes): 64-bit identifier. This value is the ID of the message that was imported.

2.2.12.2.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x72.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

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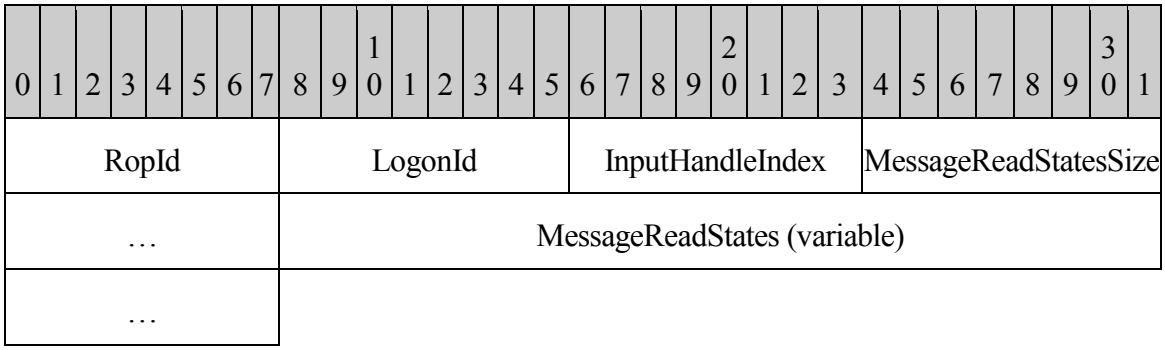
2.2.12.3 RopSynchronizationImportReadStateChanges

This remote operation synchronizes a change in the read status for messages. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.3.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x80.

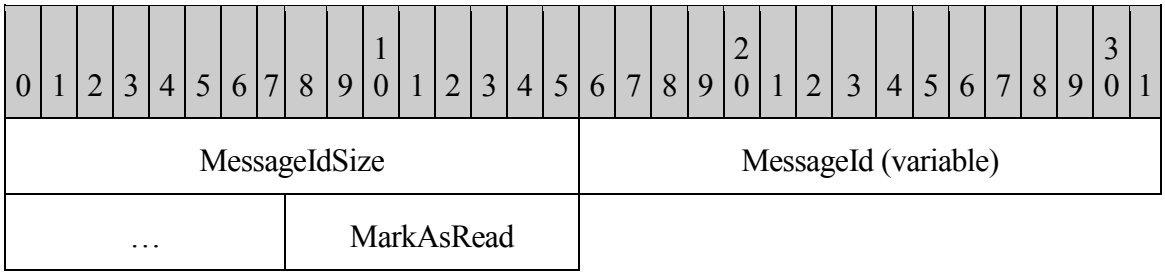
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

MessageReadStateSize (2 bytes): Unsigned 16-bit integer. This value specifies the size in bytes of the **MessageReadStates** field.

MessageReadStates (variable): List of **MessageReadState** structures. The format of the **MessageReadState** structure is defined in section 2.2.12.3.1.1. The number of bytes in this field MUST match the number specified in the **MessageReadStatesSize** field. These values specify the messages and associated read states to be changed.

2.2.12.3.1.1 MessageReadState structure



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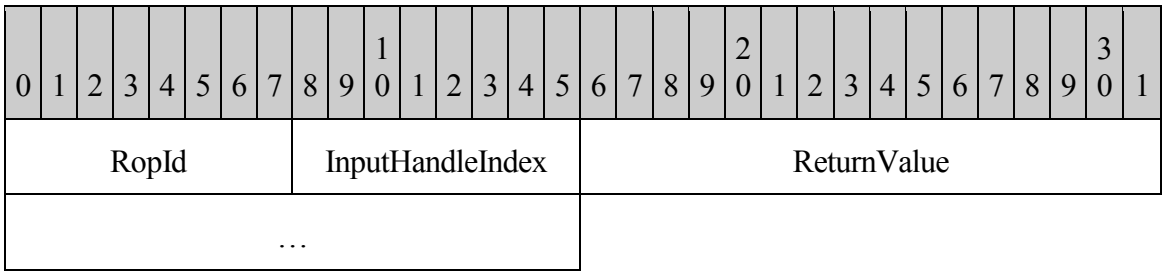
MessageIdSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **MessageId** field.

MessageId (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **MessageIdSize**. This value identifies the message to be marked as read or unread.

MarkAsRead (1 byte): 8-bit Boolean. This value specifies whether to mark the message as read or not.

2.2.12.3.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x80.

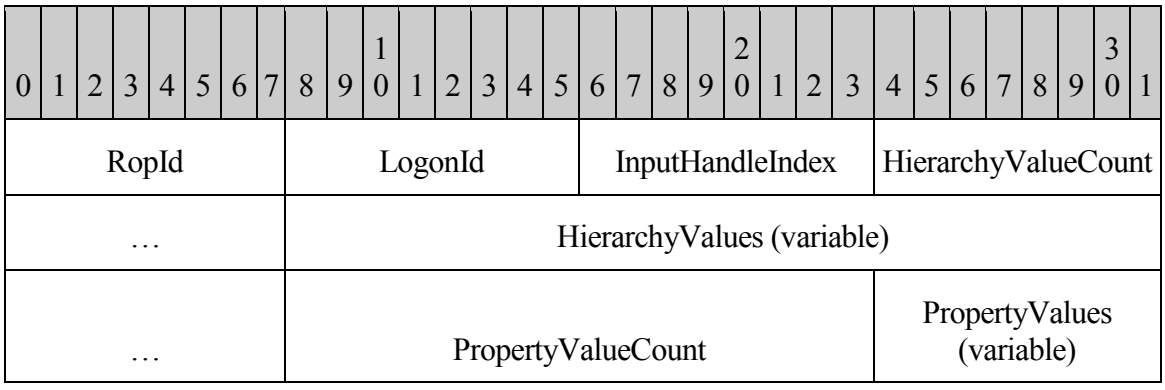
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.4 RopSynchronizationImportHierarchyChange

This remote operation synchronizes a change to the folder hierarchy. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.4.1 Request Buffer



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…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x73.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

HierarchyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **HierarchyValues** field.

HierarchyValues (variable): Array of **PropertyValue** structures. This field MUST contain the same number of structures as specified in the **PropertyValueCount** field. The format of the **PropertyValue** structure is specified in [MS-OXCDATA] and possible properties to be set are specified in [MS-OXCFXICS]. These values are used to specify some hierarchy related properties of the folder.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyValues** field.

PropertyValues (variable): Array of **PropertyValue** structures. This field MUST contain the same number of structures as specified in the **PropertyValueCount** field. The format of the **PropertyValue** structure is specified in [MS-OXCDATA]. These values are used to specify folder properties.

2.2.12.4.2 Success Response Buffer

<table>
<tr><td colspan="8">0</td><td colspan="8">1</td><td colspan="8">2</td><td colspan="8">3</td></tr>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>20</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>30</td><td>1</td></tr>
<tr><td colspan="8">RopId</td><td colspan="12">InputHandleIndex</td><td colspan="12">ReturnValue</td></tr>
<tr><td colspan="20">…</td><td colspan="12">FolderId</td></tr>
<tr><td colspan="32">…</td></tr>
<tr><td colspan="20">…</td></tr>
</table>

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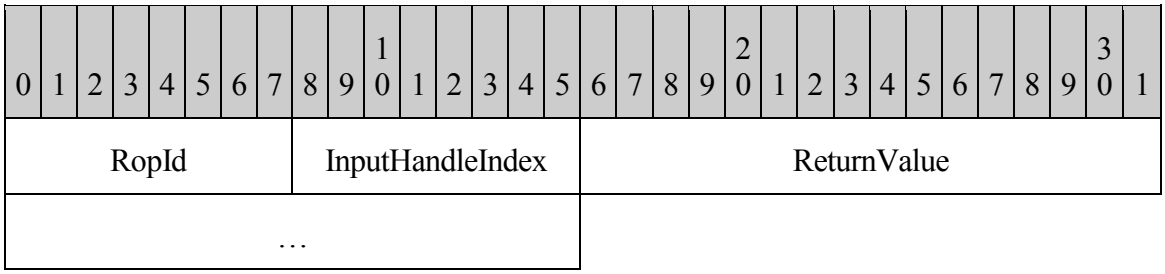
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x73.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

FolderId (8 bytes): 64-bit identifier. This value is the ID of the folder that was imported.

2.2.12.4.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x73.

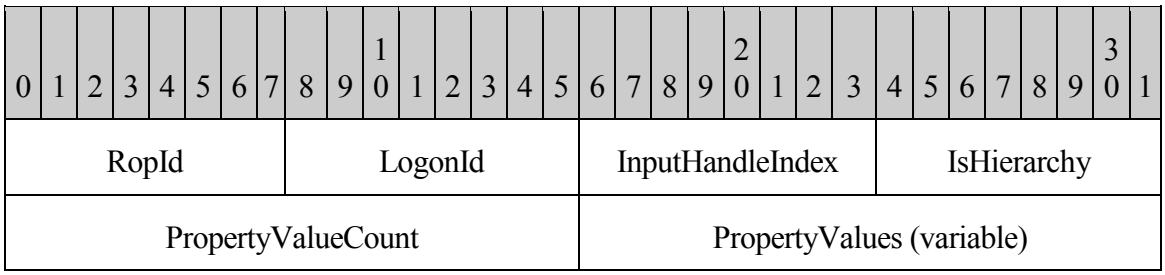
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.12.5 RopSynchronizationImportDeletes

This remote operation synchronizes deleted messages or folders. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.5.1 Request Buffer



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…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x74.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

IsHierarchy (1 byte): 8-bit Boolean. This value specifies whether this operation consists of hierarchy or content deletions.

PropertyValueCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of structures in the **PropertyValues** field.

PropertyValues (variable): Array of **PropertyValue** structures. This field MUST contain the same number of structures as specified in the **PropertyValueCount** field. The format of the **PropertyValue** structure is specified in [MS-OXCDATA] and possible properties to be set are specified in [MS-OXCFXICS]. These values are used to specify the folders or messages to delete.

2.2.12.5.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								InputHandleIndex								ReturnValue															
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x74.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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2.2.12.6 RopSynchronizationImportMessageMove

This remote operation synchronizes a move of a message from one folder to another. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.6.1 Request Buffer

<table>
<tr><td colspan="8">0</td><td colspan="8">1</td><td colspan="8">2</td><td colspan="8">3</td></tr>
<tr><td>0</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>10</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>20</td><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>6</td><td>7</td><td>8</td><td>9</td><td>30</td><td>1</td></tr>
<tr><td colspan="8">RopId</td><td colspan="12">LogonId</td><td colspan="12">InputHandleIndex</td><td colspan="12">SourceFolderIdSize</td></tr>
<tr><td colspan="32">…</td><td colspan="12">SourceFolderId (variable)</td></tr>
<tr><td colspan="8">…</td><td colspan="24">SourceMessageIdSize</td></tr>
<tr><td colspan="8">…</td><td colspan="24">SourceMessageId (variable)</td></tr>
<tr><td colspan="8">...</td><td colspan="24">PredecessorChangeListSize</td></tr>
<tr><td colspan="8">…</td><td colspan="24">PredecessorChangeList (variable)</td></tr>
<tr><td colspan="8">…</td><td colspan="24">DestinationMessageIdSize</td></tr>
<tr><td colspan="8">…</td><td colspan="24">DestinationMessageId (variable)</td></tr>
<tr><td colspan="8">…</td><td colspan="24">ChangeNumberSize</td></tr>
<tr><td colspan="8">…</td><td colspan="24">ChangeNumber</td></tr>
<tr><td colspan="8">…</td><td colspan="24"></td></tr>
</table>

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x78.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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SourceFolderIdSize (4 bytes): Unsigned 32-bit integer. This value specifies the size of the **SourceFolderId** field.

SourceFolderId (variable): Array of bytes. This field MUST contain the same number of bytes specified in the **SourceFolderIdSize** field. This value identifies the parent folder of the source message.

SourceMessageIdSize (4 bytes): Unsigned 32-bit integer. This value specifies the size of the **SourceMessageId** field.

SourceMessageId (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **SourceMessageIdSize**. This value identifies the source message.

PredecessorChangeListSize (4 bytes): Unsigned 32-bit integer. This value specifies the size of the **PredecessorChangeList** field.

PredecessorChangeList (variable): Array of bytes. This field MUST contain the same number of bytes as specified in the **PredecessorChangeListSize** field.

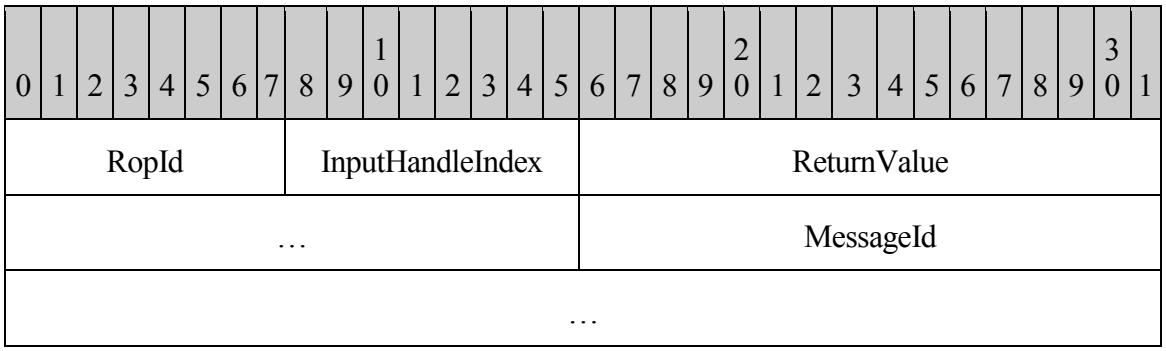
DestinationMessageIdSize (4 bytes): Unsigned 32-bit integer. This value specifies the size of the **DestinationMessageId** field.

DestinationMessageId (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **DestinationMessageIdSize**. This value identifies the destination message.

ChangeNumberSize (4 bytes): Unsigned 32-bit integer. This value specifies the size of the **ChangeNumber** field.

ChangeNumber (variable): Array of bytes. This field MUST contain the same number of bytes as specified in the **ChangeNumberSize** field. This field specifies the change number of the message.

2.2.12.6.2 Success Response Buffer



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…	

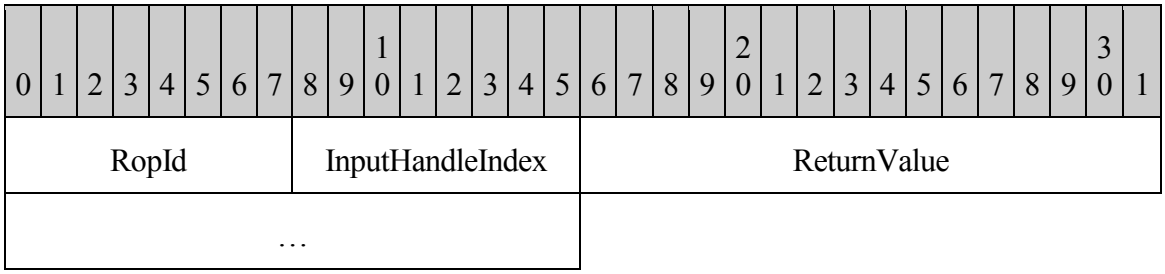
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x78.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

MessageId (8 bytes): 64-bit identifier. This value is the ID of the moved message.

2.2.12.6.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x78.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.12.7 RopSynchronizationOpenCollector

This remote operation creates a new incremental change synchronization collector object. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.7.1 Request Buffer

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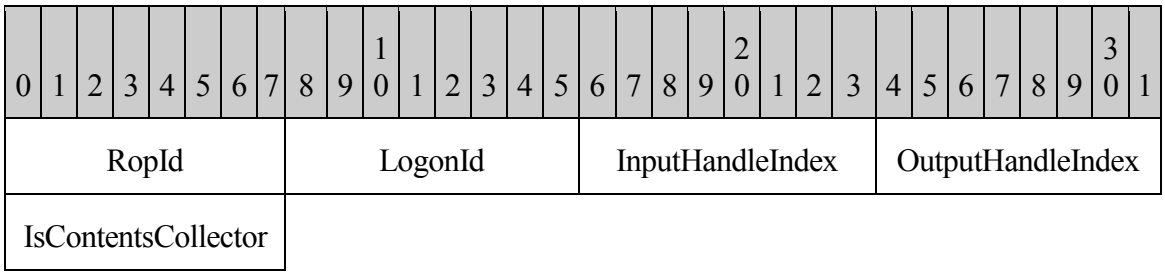


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7E.

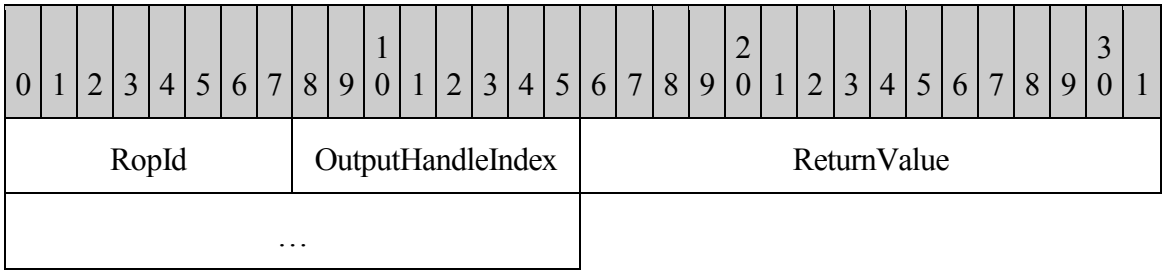
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

IsContentsCollector (1 byte): 8-bit Boolean. This value specifies whether this collector is for contents or for hierarchy.

2.2.12.7.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7E.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

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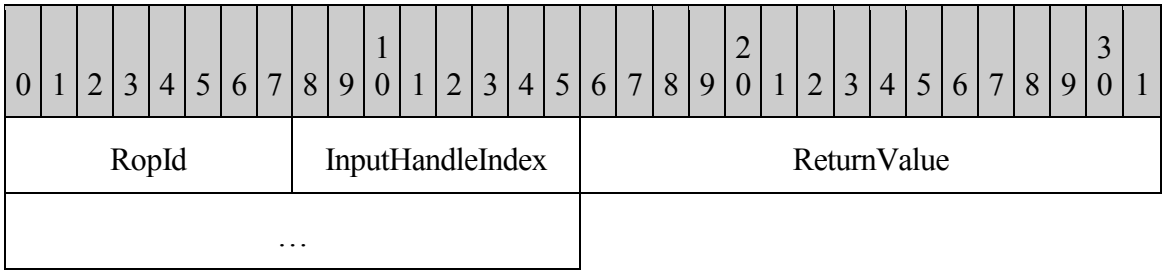
2.2.12.7.3 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7E.

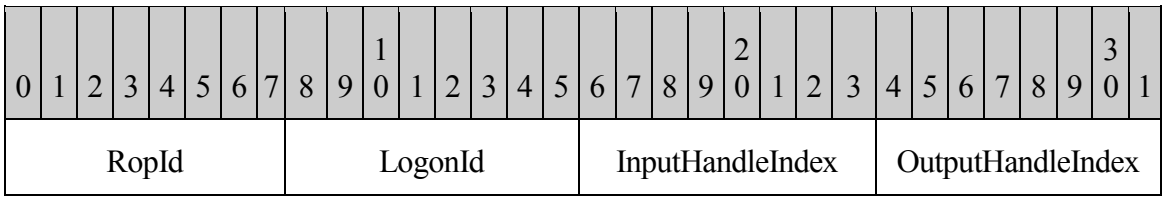
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.8 RopSynchronizationGetTransferState

This remote operation opens a synchronization transfer object to retrieve the storage state properties. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.8.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x82.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

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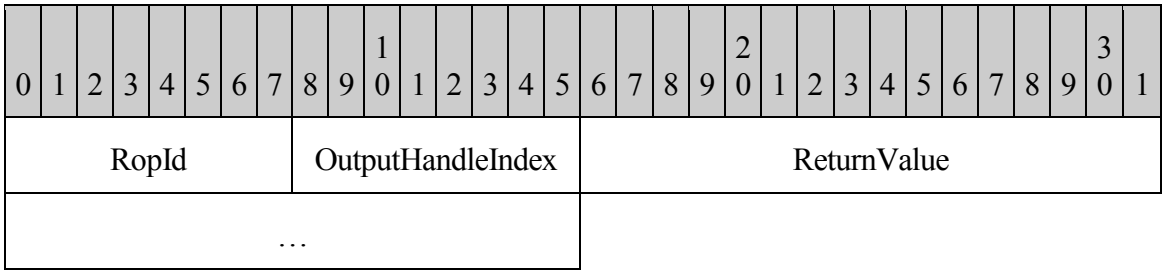
2.2.12.8.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x82.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.9 RopSynchronizationUploadStateStreamBegin

This remote operation begins an operation to upload stream data. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.9.1 Request Buffer

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x75.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

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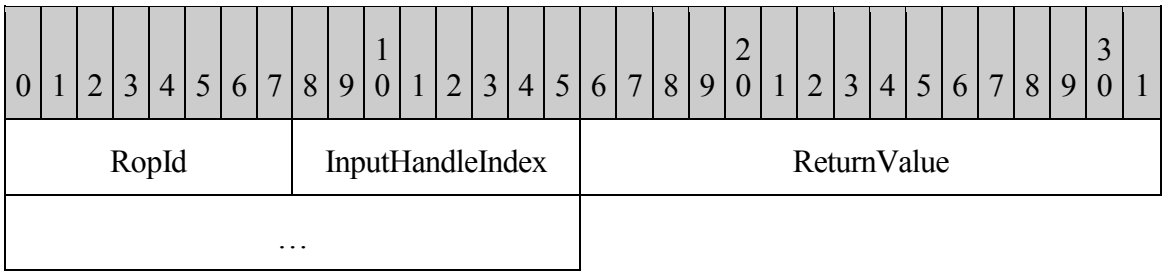
StateProperty (4 bytes): 32-bit PropertyTag. The possible values for this field are specified in [MS-OXCFXICS].

TransferBufferSize (4 bytes): Unsigned 32-bit integer. This value specifies the size of the stream to be uploaded.

2.2.12.9.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x75.

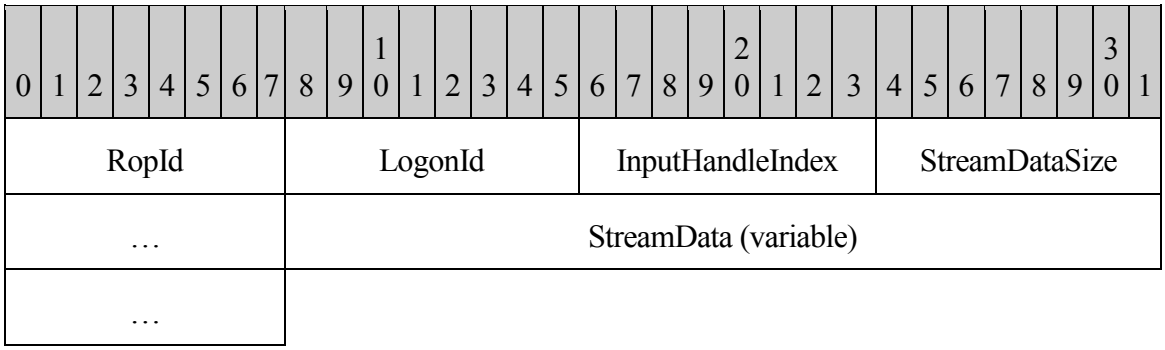
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.10 RopSynchronizationUploadStateStreamContinue

This remote operation uploads storage state property values. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.10.1 Request Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x76.

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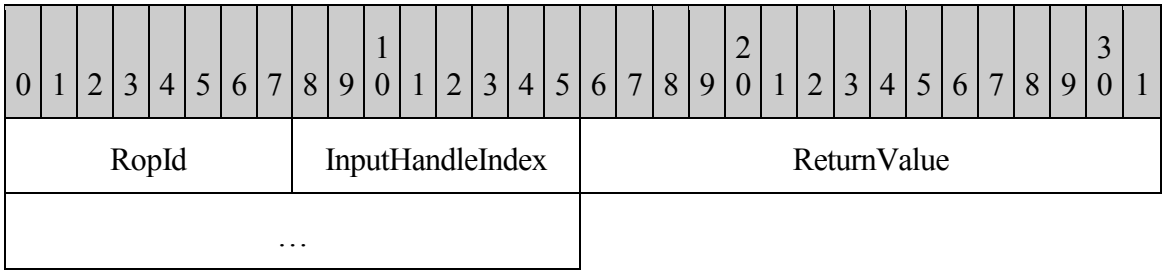
LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

StreamDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **StreamData** field.

StreamData (variable): Array of bytes. This field MUST contain the same number of bytes as specified in the Stream**DataSize** field. This array contains the state stream data to be uploaded.

2.2.12.10.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x76.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.11 RopSynchronizationUploadStateStreamEnd

This remote operation marks the end of a storage state property upload operation. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.11.1 Request Buffer

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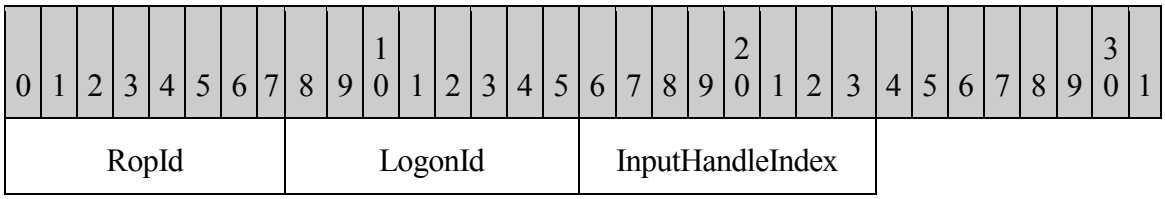
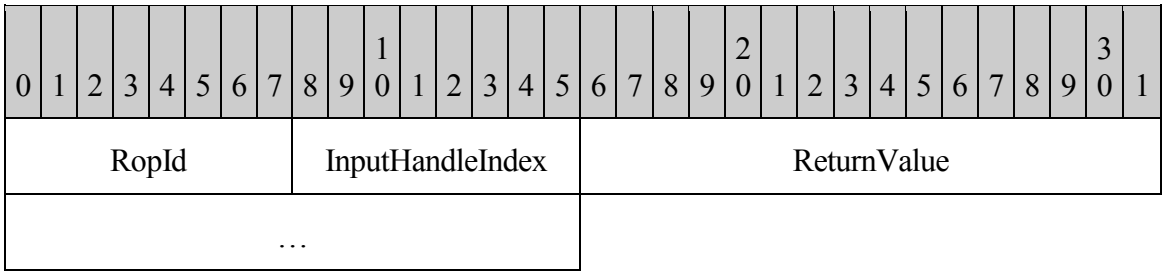


RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x77.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

2.2.12.11.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x77.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.12 RopSetLocalReplicaMidsetDeleted

This remote operation marks a set of messages in a given folder as deleted. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.12.1 Request Buffer

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0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
RopId								LogonId								InputHandleIndex								DataSize							
…								LongTermIdRangeCount																							
…								LongTermIdRanges (variable)																							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x93.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

DataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of both the **LongTermIdRangeCount** and **LongTermIdRanges** fields

LongTermIdRangeCount (4 bytes): Unsigned 32-bit integer. This value specifies the number of structures in the **LongTermIdRanges** field.

LongTermIdRanges (variable): Array of **LongTermIdRange** structures. This field MUST contain the same number of structures as specified in the **LongTermIdRangeCount** field. The format of the **LongTermIdRange** structure is specified in section 2.2.12.12.1.1. These structures specify the ranges of message identifiers that have been deleted.

2.2.12.12.1.1 LongTermIdRange structure

0	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	20	1	2	3	4	5	6	7	8	9	30	1
MinLongTermId (24 bytes)																															

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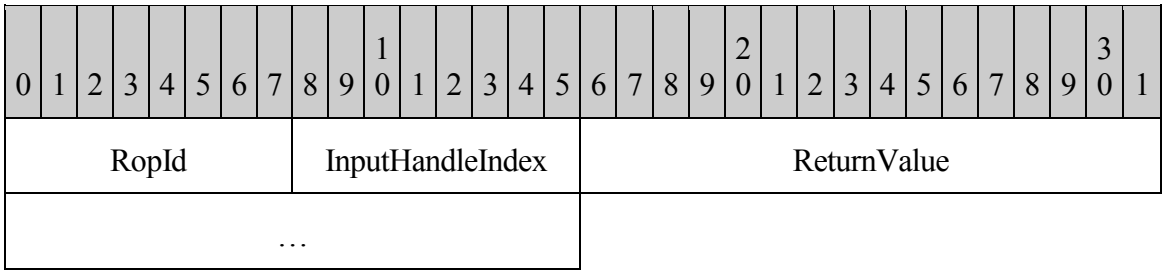
MaxLongTermId (24 bytes)

MinLongTermId (24 bytes): LongTermId structure. The format of the **LongTermId** structure is specified in [MS-OXCDATA]. This identifier specifies the beginning of a range.

MaxLongTermId (24 bytes): LongTermId structure. The format of the **LongTermId** structure is specified in [MS-OXCDATA]. This identifier specifies the end of a range.

2.2.12.12.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x93.

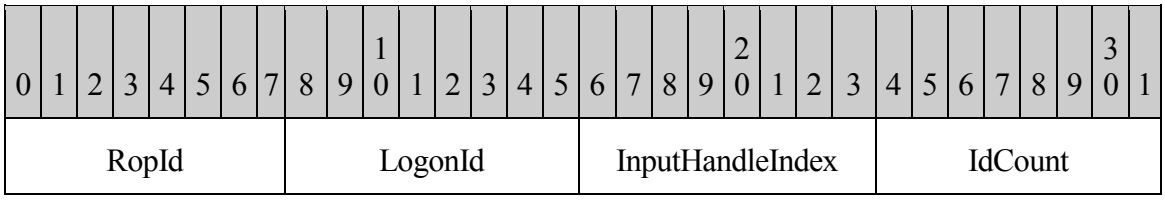
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.12.13 RopGetLocalReplicaIds

This remote operation reserves a range of IDs to be used by a local replica. More detailed information about this operation can be found in [MS-OXCFXICS].

2.2.12.13.1 Request Buffer



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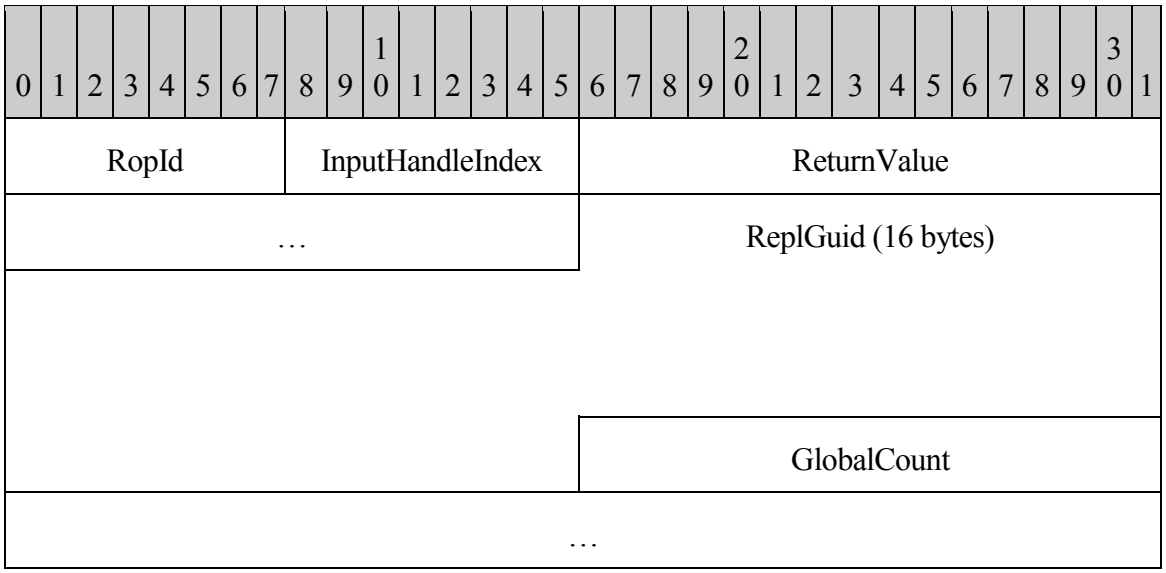
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7F.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

IdCount (4 bytes): Unsigned 32-bit integer. This value specifies the number of IDs to reserve.

2.2.12.13.2 Success Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7F.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST be set to 0x00000000.

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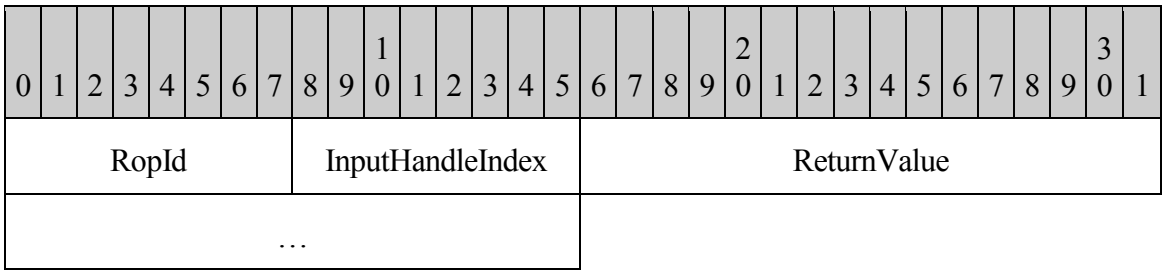
ReplGuid (16 bytes): REPLGUID structure. The format of the **REPLGUID** structure is specified in [MS-OXCDATA]. This structure specifies the local table replica GUID.

GlobalCount (6 bytes): Array of bytes. This array specifies the first value in the reserved range.

2.2.12.13.3 Failure Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x7F.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

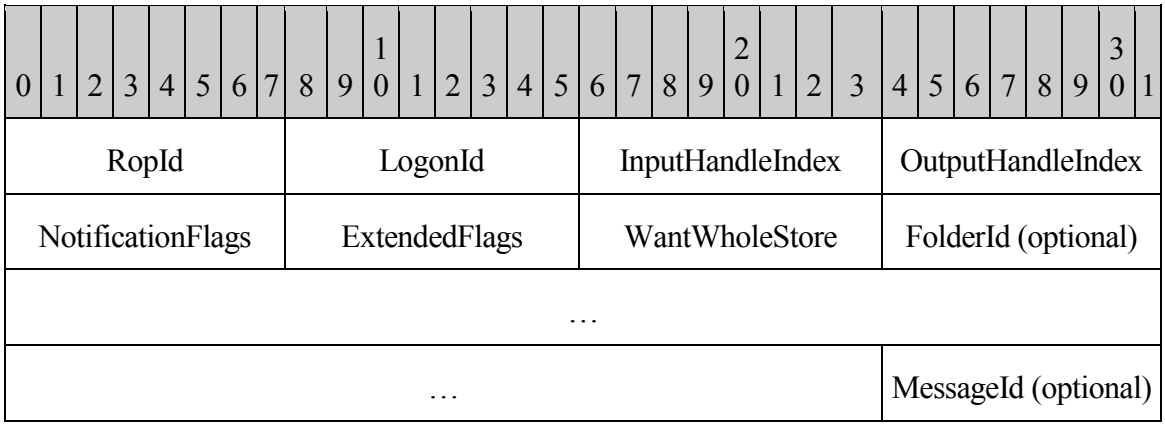
ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation. This field MUST NOT be set to 0x00000000.

2.2.13 Notification ROPs

2.2.13.1 RopRegisterNotification

This remote operation registers for notification events. More detailed information about this operation can be found in [MS-OXCNOTIF].

2.2.13.1.1 Request Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x29.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

NotificationFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCNOTIF]. These flags specify the types of events to register for.

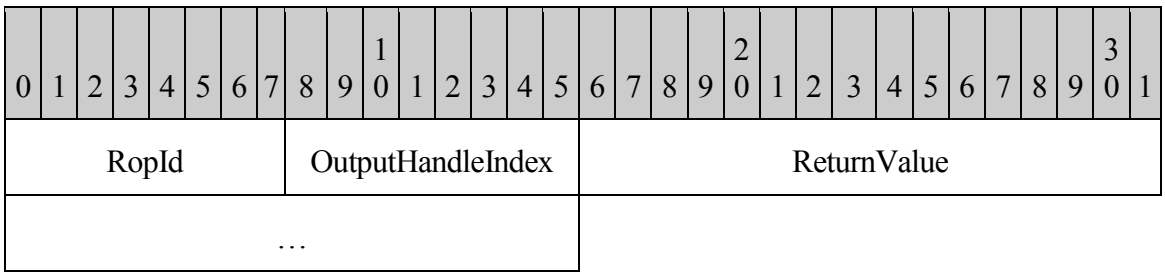
ExtendedFlags (1 byte): 8-bit flags structure. The possible values are specified in [MS-OXCNOTIF].

WantWholeStore (1 byte): 8-bit Boolean. This value specifies whether the notification is scoped to the entire mailbox/store instead of a specific folder or message.

FolderId (8 bytes, optional): 64-bit identifier. This field MUST be present when the WantWholeStore field is zero and MUST NOT be present when it is non-zero. This value specifies the folder to register notifications for.

MessageId (8 bytes, optional): 64-bit identifier. This field MUST be present when the WantWholeStore field is zero and MUST NOT be present when it is zero. This value specifies the message to register notifications for.

2.2.13.1.2 Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x29.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.13.2 RopSynchronizationOpenAdvisor

This remote operation opens the incremental change synchronization advisor object. More detailed information about this operation can be found in [MS-OXCNOTIF].

2.2.13.2.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								InputHandleIndex								OutputHandleIndex							

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x83.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the output Server Object will be stored. More information about Server Objects can be found in section 3.

2.2.13.2.2 Response Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								OutputHandleIndex								ReturnValue															

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…	

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x83.

OutputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **OutputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.13.3 RopRegisterSynchronizationNotifications

This remote operation registers incremental change synchronization notifications for given folders. More detailed information about this operation can be found in [MS-OXCNOTIF].

2.2.13.3.1 Request Buffer

0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
RopId								LogonId								InputHandleIndex								FolderCount							
								FolderIds (variable)																							
…								FolderChangeNumbers (variable)																							
…																															

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x84.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

FolderCount (2 bytes): Unsigned 16-bit integer. This value specifies the number of folders to register for notifications for.

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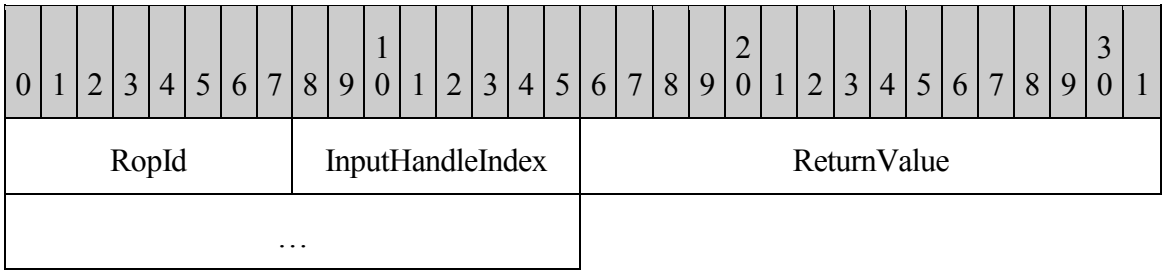
FolderIds (variable): Array of 64-bit identifiers. This field MUST contain the same number of identifiers as specified in the **FolderCount** field. These IDs specify the folders to register for notification for.

FolderChangeNumbers (variable): Array of unsigned 32-bit integers. This field MUST contain the same number of identifiers as specified in the **FolderCount** field. These values are unique change numbers for each folder.

2.2.13.3.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x84.

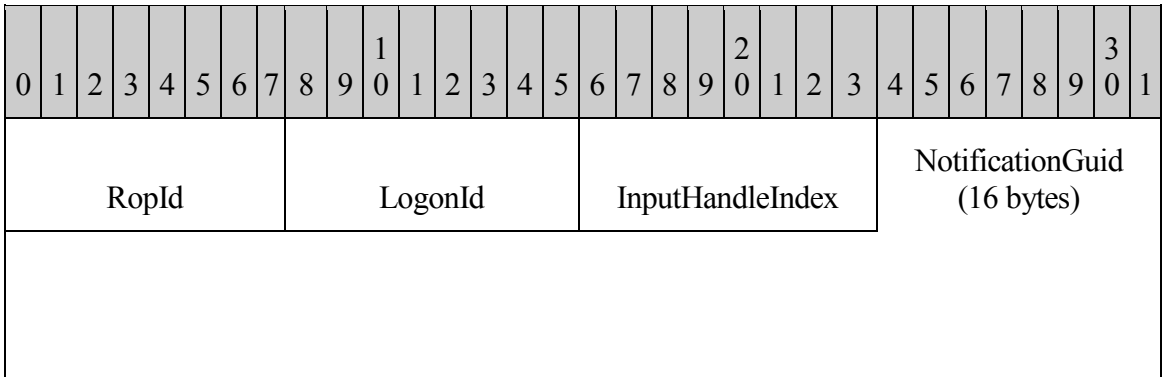
InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.13.4 RopSetSynchronizationNotificationGuid

This remote operation sets the incremental synchronization notification GUID. More detailed information about this operation can be found in [MS-OXCNOTIF].

2.2.13.4.1 Request Buffer



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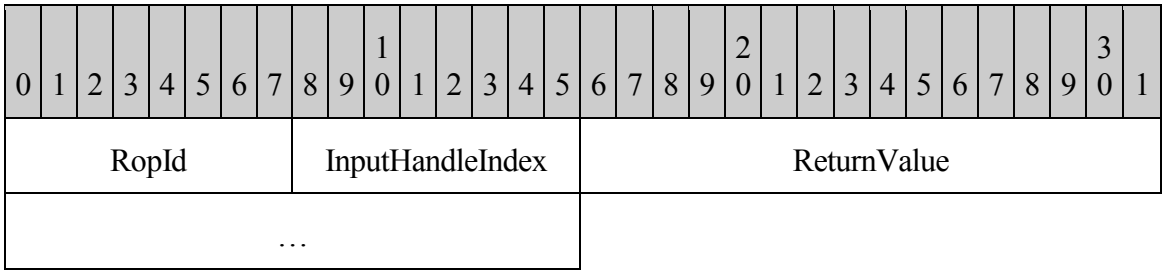
RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x88.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

NotificationGuid (16 bytes): GUID. This guid specifies the notification guid to set.

2.2.13.4.2 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x88.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index MUST be set to the **InputHandleIndex** specified in the request. More information about Server Objects can be found in section 3.

ReturnValue (4 bytes): Unsigned 32-bit integer. This value specifies the status of the remote operation.

2.2.13.5 RopNotify

This remote operation response provides notification event data to the client. There is no request buffer for this Rop. More detailed information about this operation can be found in [MS-OXCNOTIF].

2.2.13.5.1 Response Buffer

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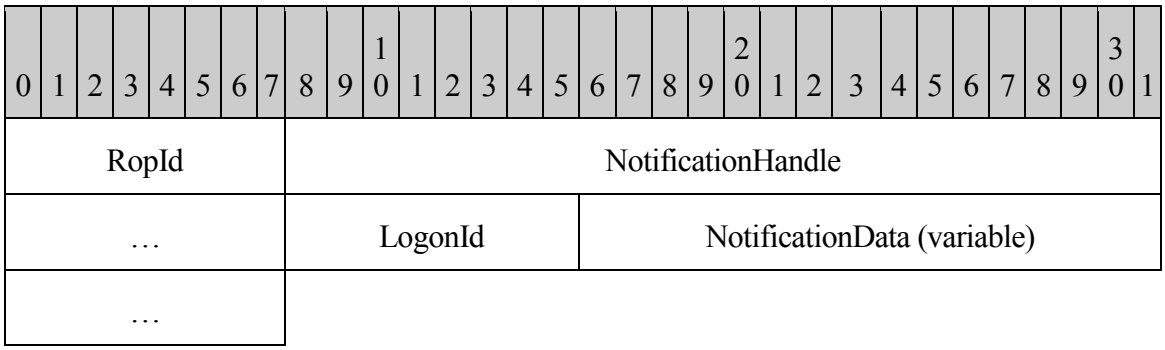

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x2A.

NotificationHandle (4 bytes): 32-bit Server Object Handle. This handle specifies the notification server object associated with this notification event.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this notification event.

NotificationData (variable): Various structures. The notification structures that can be found here are specified in [MS-OXCDATA]

2.2.13.6 RopPending

This remote operation response notifies the client that there are pending notifications on a session. There is no request buffer for this Rop. More detailed information about this operation can be found in [MS-OXCNOTIF].

2.2.13.6.1 Response Buffer

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x6E.

SessionIndex (2 bytes): Unsigned 16-bit integer. This index specifies which session has pending notifications.

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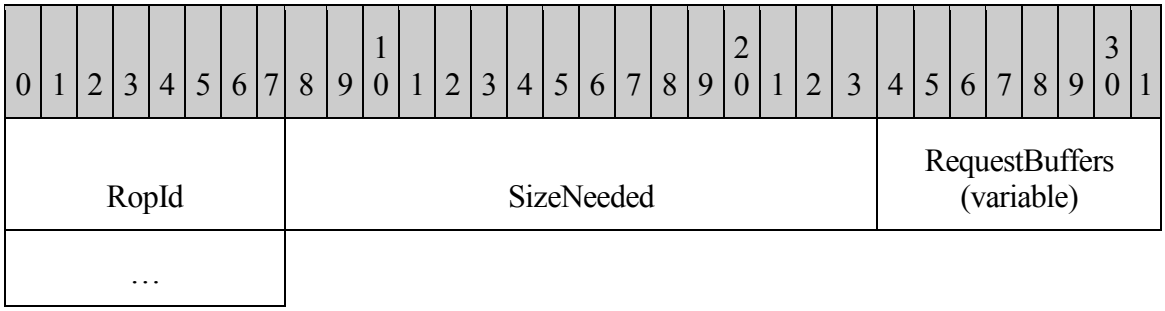
2.2.14 Other ROPs

2.2.14.1 RopBufferTooSmall

This remote operation response notifies the client that there is insufficient space to return all ROP responses.

2.2.14.1.1 Response Buffer



RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xFF.

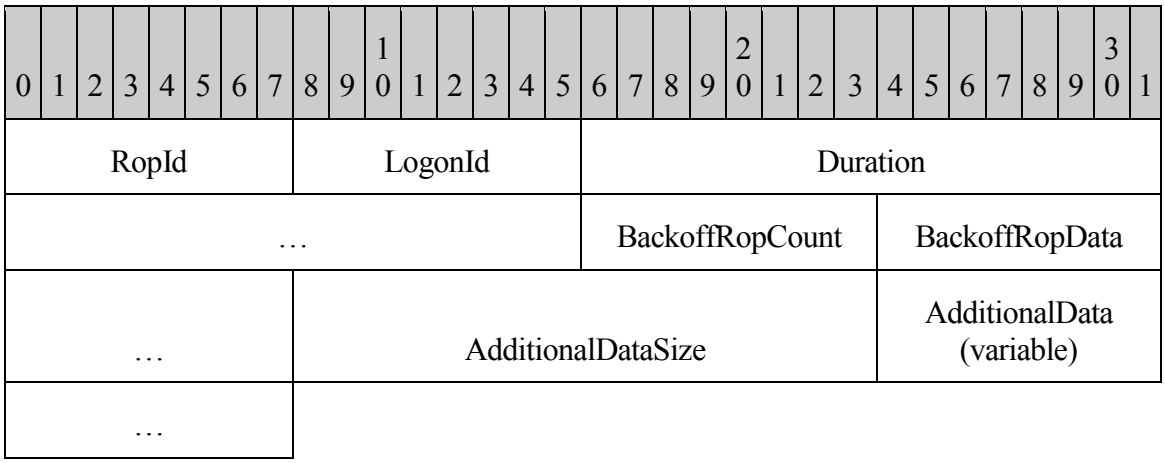
SizeNeeded (2 bytes): Unsigned 16-bit integer. This value specifies the size requested for the output buffer for a subsequent request.

RequestBuffers (variable): Array of bytes. The size of this array is the remaining space in the output ROP response buffer. This array specifies the section of the input buffer that was not executed because of this condition.

2.2.14.2 RopBackoff

This remote operation response notifies the client that the server is busy and is requesting that the client retry later.

2.2.14.2.1 Response Buffer



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RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0xF9.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon to apply a logon backoff to.

Duration (4 bytes): Unsigned 32-bit integer. This value specifies the number of milliseconds to apply a logon backoff.

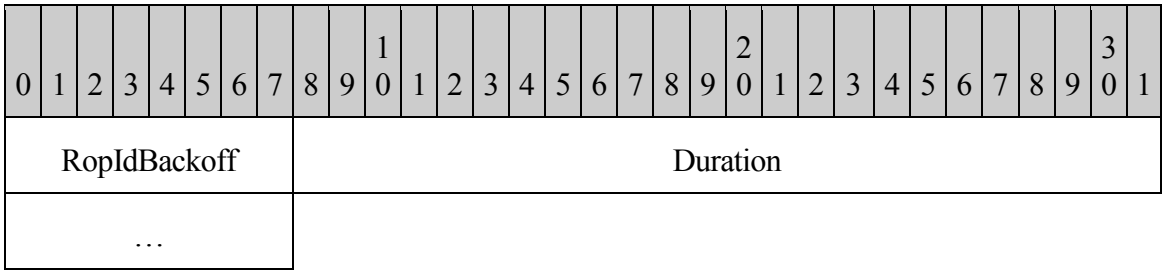
BackoffRopCount (1 byte): Unsigned 8-bit integer. This value specifies the number of structures in the **BackoffRopData** field.

BackoffRopData (variable): Array of **BackoffRop** structures. The format of the **BackoffRop** structure is specified in section 2.2.14.2.1.1. This array specifies the operations to be backed off and also the backoff duration for each.

AdditionalDataSize (2 bytes): Unsigned 16-bit integer. This value specifies the size of the **AdditionalData** field.

AdditionalData (variable): Array of bytes. This field MUST contain the same number of bytes as specified in **AdditionalDataSize**. This array specifies additional information about the backoff response.

2.2.14.2.1.1 BackoffRop structure



RopIdBackoff (1 byte): Unsigned 8-bit integer. This value identifies the remote operation for which to apply the ROP backoff.

Duration (4 bytes): Unsigned 32-bit integer. This value specifies the number of milliseconds to apply a ROP backoff.

2.2.14.3 RopRelease

This remote operation releases all resources associated with a server object.

2.2.14.3.1 Request Buffer

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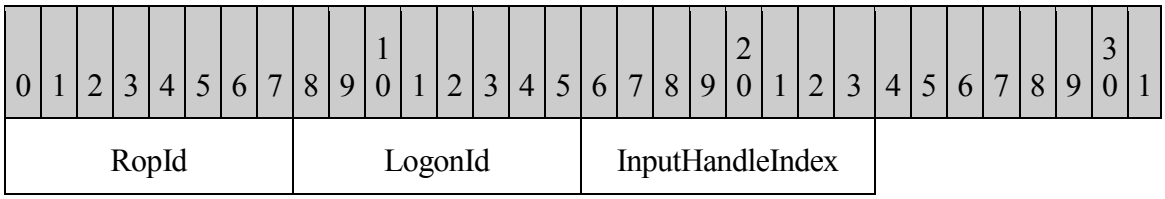

RopId (1 byte): Unsigned 8-bit integer. This value specifies the type of remote operation. This field MUST be set to 0x01.

LogonId (1 byte): Unsigned 8-bit integer. This value specifies the logon associated with this operation.

InputHandleIndex (1 byte): Unsigned 8-bit integer. This index specifies the location in the Server Object Handle Table where the handle for the input Server Object is stored. More information about Server Objects can be found in section 3.

3 Protocol Details

3.1 Client Details

3.1.1 Abstract Data Model

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

Logon Collection: A collection of LogonIds in use.

Server Object Handle Collection: A collection of valid Server Object Handles received from the server but not yet released.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

The client creates ROP buffers consisting of ROP requests for operations to be performed on the server. This input buffer is sent to the server and an output ROP buffer is received back from the server.

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3.1.4.1 Creating an Input ROP Buffer

An input ROP buffer is constructed by the client and sent to the server. The client packages its ROP requests together in the intended execution order and creates an associated Server Object Handle Table.

When assembling an input ROP buffer, the client MUST use a Server Object Handle Table large enough to include an entry for the largest index used by ROP requests in the buffer. Each entry in the table that is only referenced as input indexes for ROPs MUST be filled in with the handle of the Server Object that is intended to be the input of the operation. Each entry that is only referenced as an output index SHOULD be filled in with the 0xFFFFFFFF value. Each entry that is referenced first as an output index and then as input indexes SHOULD also be initialized to the 0xFFFFFFFF value.

Multiple ROPs in a buffer can use the same Server Object Handle Table index. For example, a **RopOpenFolder** can specify index 1 as the location to place the handle for the folder Server Object. Later in the same buffer, a **RopGetContentsTable** can specify index 1 as the location for the input Server Object handle.

3.1.4.2 Logon

The client specifies the logon ID associated with the logon Server Object created by a **RopLogon** request. The client manages the identifiers in use by use of a Logon Collection. Any 8-bit integer value is allowed for the logon ID and the client does not have to specify logon IDs in a certain numeric order. If the client specifies an active logon ID, the current logon is released and replaced with the new one.

3.1.5 Message Processing Events and Sequencing Rules

The client finds the responses for the operations in this output buffer in the same order as sent in the input buffer. The output buffer can also include ROP responses that do not have corresponding ROP requests in the input buffer. These extra ROP responses include **RopBackoff**, **RopBufferTooSmall**, **RopNotify**, and **RopPending**.

3.1.5.1 Extra ROP Responses

3.1.5.1.1 RopBackoff

Any client reporting its version as 12.0.4228.0 or later (as specified in [MS-OXCRPC]) MUST support processing the **RopBackoff** response buffer. The layout of this ROP is specified in section 2.2.14.2.

RopBackoff can appear at any location in the ROP output buffer. This ROP response indicates that the server requests the client delay the resending of ROP requests for the specified logon or type of ROPs for an amount of time. When this response contains a non-zero **RopIdBackoff**, it specifies the ROP request that needs to be delayed. The ROP response that was delayed and all subsequent ROP responses will not be in the buffer. When the

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RopIdBackoff is set to 0x00, this indicates that all ROP requests for that logon should be delayed.

3.1.5.1.2 RopBufferTooSmall

The layout of this ROP is specified in section 2.2.14.1.

RopBufferTooSmall can appear at any location in the **Rops** field in the ROP buffer. This ROP response indicates that the size of the output buffer is insufficient to return responses for all the ROP requests sent. The **RopBufferTooSmall** includes all the ROP Requests that were not executed by the server. The client SHOULD resend the unexecuted ROP requests in a new call to the server. The client MUST also specify an output buffer size that is at least as large as the size specified in the **RopBufferTooSmall** response.

3.1.5.1.3 RopNotify and RopPending

These ROP responses appear at the end of the ROP output buffer. More detailed information about these ROPs can be found in [MS-OXCNOTIF].

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

3.1.7.1 Shutdown

When the client shuts down, it SHOULD send **RopRelease** requests to the server to clean up all Server Objects it had created but had not yet released before it disconnects.

3.2 Server Details

3.2.1 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 specified in this document.

Logon Map: A mapping of LogonIds and logon Server Objects.

Server Object Map: A mapping of Server Object Handles and Server Objects. There is one map for each logon Server Object.

3.2.2 Timers

None.

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3.2.3 Initialization

When a connection is first set up between a client and server via the EMSMDB interface specified in [MS-OXCRPC], the Server Object Map and Logon Map are empty.

3.2.4 Higher-Layer Triggered Events

3.2.4.1 Notifications

More detailed information about notifications can be found in [MS-OXCNOTIF].

3.2.4.2 Backoff

When the server determines that a ROP request needs to be delayed, the server MUST respond with either a **RopBackoff** response or fail the RPC call.

If the server version is greater than 08.00.0525.0, and the client version is greater than 12.0.4228.0, the server SHOULD add a **RopBackoff** response buffer is returned in place of the response for the ROP request. If either the client or the server are earlier versions, the server MUST instead fail the RPC call by raising the RPC_S_SERVER_TOO_BUSY exception as specified in [MS-OXCRPC].

If ROPs are specified in a **RopBackoff** response, then all subsequent ROP requests SHOULD NOT be processed.

3.2.4.3 Insufficient Output Buffer Space

When the server determines that there is not enough space remaining in the output ROP buffer for responses for remaining ROPs, it MUST NOT execute the remaining ROPs. If the client is able to resubmit the remaining ROPs in another call, then the server MUST use a **RopBufferTooSmall** response. If another call would fail, such as if one ROP response is larger than the maximum output RopBufferSize, the server MUST fail the RPC call returning 0x0000047D.

3.2.5 Message Processing Events and Sequencing Rules

3.2.5.1 Processing an Input ROP Buffer

When processing an input ROP buffer received from a client, the server MUST execute the ROP requests in the order they are specified in the ROP buffer and MUST NOT process more than one input ROP buffer concurrently for a connection. The ROP responses in the output ROP buffer MUST also be in the same order in which they were executed.

If the server is unable to parse the ROP requests in the input ROP buffer, the RPC call MUST fail by returning 0x000004B6.

During execution of a ROP request, the server needs to resolve the Server Object Handle Table index to a Server Object. Any index used for input is converted into the corresponding

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Server Object by looking up the handle in the Server Object Handle Table and then looking up the Server Object Handle in the Server Object Map associated with the logon for the ROP request. If any lookup in the Logon Map or the Server Object Map fails, the server MUST fill in a failure ROP response with a non-zero return value.

After successful execution of a ROP request that created a Server Object, the server MUST assign an unused Server Object Handle to the object and record the mapping in the Server Object Map for the logon associated with the Rop. The handle assigned is then set in the Server Object Handle Table at the location specified by the output index in the ROP request and can be potentially used by subsequent ROP requests in the buffer.

Because the Server Object Handle value 0xFFFFFFFF is used to initialize unused entries of a Server Object Handle Table, a server MUST NOT assign that value to a created Server Object.

3.2.5.2 Creating an Output ROP Buffer

After processing the input ROP buffer, a list of ROP responses and a modified Server Object Handle Table are specified in the output ROP buffer created by the server. This table MUST be large enough to contain an entry for the highest Server Object Handle Table index specified in the ROP responses. The table can be a smaller size compared to the table in the input ROP buffer if entries at the end of the table were not referenced. The server MUST preserve the order of entries in the Server Object Handle Table between the input and output tables.

3.2.5.3 RopRelease

The format for the **RopRelease** request buffer is specified in section 2.2.14.3.

This request is used when the client is done with a Server Object. The server MUST remove the mapping for the Server Object Handle from the Server Object Map and release the resources associated with it. The same Server Object Handle can now be reused for another Server Object. If the Server Object specified is a logon Server Object, then the server MUST also remove it from the Logon Map.

Unlike all other ROP requests, **RopRelease** does not have any associated ROP response. The server MUST not return any response for a **RopRelease** request. Any errors resulting from the execution of this ROP MUST be ignored and not sent back to the client.

3.2.6 Timer Events

None.

3.2.7 Other Local Events

3.2.7.1 Disconnection

When the client disconnects, the server MUST release all Server Objects, Logon Maps, and Server Object Maps associated with the connection.

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4 Protocol Examples

4.1 Empty ROP Buffer

4.1.1 Full Buffer

02 00

4.1.2 Explanation of Parts

RopSize
02 00

Rops
<empty>

ServerObjectHandleTable
<empty>

4.1.3 Description

This empty buffer contains no ROPs and no Server Object Handles. This type of buffer can be used by a client when it expects to receive extra information in the output buffer, such as pending notifications.

4.2 Single ROP Request

4.2.1 Full Buffer

09 00 15 01 01 02 01 FF 0F 6D 00 00 00 56 00 00 00

4.2.2 Explanation of Parts

RopSize
09 00

Rops

15	RopId (RopQueryRows)
01	LogonId
01	Input Handle Index
02	QueryRows Flags
01	Forward Read
FF 0F	RowCount

ServerObjectHandleTable
6D 00 00 00 (Handle 0, unused)
56 00 00 00 (Handle 1, input of RopQueryRows)

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4.2.3 Description

This buffer contains a single ROP that has an input index. The **RopSize** indicates the location of the Server Object Handle Table. The table in this buffer also contains an unused entry.

4.3 Multiple ROP Request

4.3.1 Full Buffer

14 00 02 00 00 01 01 00 59 65 73 73 69 72 00 04 00 01 02 04 6E 00 00 00 FF FF FF FF FF FF FF FF

4.3.2 Explanation of Parts

RopSize
14 00

Rops
02 RopId (RopOpenFolder)
00 LogonId
00 Input Handle Index
01 Output Handle Index
01 00 59 65 73 73 69 72 ID of the folder to open
00 Open Mode Flags

04 RopId (RopGetHierarchyTable)
00 LogonId
01 Input Handle Index
02 Output Handle Index
04 Table Flags

ServerObjectHandleTable
6E 00 00 00 (Handle 0, input of RopOpenFolder)
FF FF FF FF (Handle 1, output of RopOpenFolder, input of RopGetHierarchyTable)
FF FF FF FF (Handle 2, output of RopGetHierarchyTable)

4.3.3 Description

This buffer consists of two ROP requests. The first request is a **RopOpenFolder**, and the second is a **RopGetHierarchyTable**. The input for the second ROP is the output for the first ROP. All output handles are initialized to 0xFFFFFFFF.

4.4 RopRelease Request

4.4.1 Full Buffer

08 00 01 00 00 01 00 01 6F 00 00 00 6E 00 00 00

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4.4.2 Explanation of Parts

RopSize
08 00

Rops
01 RopId (RopRelease)
00 LogonId
00 Input Handle Index

01 RopId (RopRelease)
00 LogonId
01 Input Handle Index

ServerObjectHandleTable
6F 00 00 00 (Handle 0, input of first RopRelease)
6E 00 00 00 (Handle 1, input of second RopRelease)

4.4.3 Description

This buffer contains a pair of **RopRelease** requests. These two ROPs are releasing two different Server Objects, based on the different Server Object Handles they reference.

4.5 RopBufferTooSmall Response

4.5.1 Full Buffer

1C 00 FF 2C 00 03 00 00 01 FF 0F 01 00 15 89 00 78 27 1E 03 01 00 15 89 00 78 2F BB 12 00 00 00 FF FF FF FF

4.5.2 Explanation of Parts

RopSize
1C 00

Rops
FF RopId (RopBufferTooSmall)
2C 00 Size Needed (0x002C bytes)
03 RopId (RopOpenMessage)
00 LogonId
00 Input Handle Index
01 Output Handle Index
FF 0F Code Page ID
01 00 15 89 00 78 27 1E Folder Id
03 Open Mode Flags
01 00 15 89 00 78 2F BB Message Id

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ServerObjectHandleTable
12 00 00 00 (Handle 0, input of RopOpenMessage)
FF FF FF FF (Handle 1, output of RopOpenMessage)

4.5.3 Description

This buffer shows a **RopOpenMessage** call that would produce a response that wouldn't fit in the buffer (the output buffer was much smaller than usual for this example). The **RopBufferTooSmall** indicates that it would need at least 0x002C bytes to return a response buffer. The **RopOpenMessage** request and the Server Object Handle Table are the same as what would have been specified in the input ROP buffer. In this buffer, the **RopBufferTooSmall** is the first ROP, which indicates that no ROPs were executed before running out of room.

4.6 Logon RopBackoff Response

4.6.1 Full Buffer

12 00 12 00 00 00 00 00 00 F9 00 34 12 00 00 00 00 00 28 00 00 00

4.6.2 Explanation of Parts

RopSize
12 00

Rops
12 RopSetColumns
00 Input Handle Table Index
00 00 00 00 ReturnValue
00 Table Status

F9 RopBackoff
00 LogonId
34 12 00 00 Duration
00 BackoffRopCount
00 00 AdditionalDataSize

ServerObjectHandleTable
28 00 00 00 (Handle 0, input of RopSetColumns)

4.6.3 Description

This buffer contains a **RopBackoff**Response in the same buffer as a **RopSetColumns** response. The **RopBackoff** here contains no information specific to a ROP, but instead a general duration for the logon.

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4.7 ROP RopBackoff Request

4.7.1 Full Buffer

18 00 02 01 00 00 00 00 00 00 F9 00 00 00 00 00 01 1C 17 4F 04 00 00 00 0A 00 00 00 24 00 00 00

4.7.2 Explanation of Parts

RopSize
18 00

Rops
02 RopOpenFolder
01 Output Handle Index
00 00 00 00 ReturnValue
00 HasRules
00 IsGhosted

F9 RopBackoff
00 Logon Id
00 00 00 00 Duration
01 BackoffRopCount
1C RopIdBackoff (RopCreateFolder)
17 4F 04 00 Duration
00 00 AdditionalDataSize

ServerObjectHandleTable
0A 00 00 00 (Handle 0, unused)
24 00 00 00 (Handle 1, output of RopOpenFolder)

4.7.3 Description

This buffer shows a **RopBackoff** response in the same buffer as a **RopOpenFolder** response. The **RopBackoff** contains information about only one ROP, **RopCreateFolder**.

5 Security

5.1 Security Considerations for Implementers

There are no special security considerations specific to this protocol. General security considerations pertaining to the underlying Wire Format protocol apply, as specified in [MS-OXCRPC].

5.2 Index of Security Parameters

None.

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6 Appendix A: Office/Exchange Behavior

The information in this specification is applicable to the following versions of Office/Exchange:

- Office 2003 with Service Pack 3 applied
- Exchange 2003 with Service Pack 2 applied
- Office 2007 with Service Pack 1 applied
- Exchange 2007 with Service Pack 1 applied

Exceptions, if any, are noted below. Unless otherwise specified, any statement of optional behavior in this specification prescribed using the terms SHOULD or SHOULD NOT implies Office/Exchange behavior in accordance with the SHOULD or SHOULD NOT prescription. Unless otherwise specified, the term MAY implies Office/Exchange does not follow the prescription.

<1> Section 2.2.1. Exchange Server behavior is undefined when it encounters a reserved RopId.

<2> Section 2.2.8.6.1. Exchange 2003 SP2 and Exchange 2007 SP1 limit the size of the stream to 2^31 bytes.

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