

[MS-OXMVMBX]: Mailbox Migration

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Revision Summary

Date	Revision History	Revision Class	Comments
04/04/2008	0.1		Initial Availability.
06/27/2008	1.0		Initial Release.
08/06/2008	1.01		Revised and edited technical content.
09/03/2008	1.02		Revised and edited technical content.
12/03/2008	1.03		Updated IP notice.
03/04/2009	1.04		Revised and edited technical content.
04/10/2009	2.0		Updated applicable product releases.
07/15/2009	3.0	Major	Revised and edited for technical content.
11/04/2009	3.1.0	Minor	Updated the technical content.
02/10/2010	3.1.0	None	Version 3.1.0 release
05/05/2010	3.1.1	Editorial	Revised and edited the technical content.
08/04/2010	3.2	Minor	Clarified the meaning of the technical content.
11/03/2010	3.2	No change	No changes to the meaning, language, or formatting of the technical content.
03/18/2011	3.2	No change	No changes to the meaning, language, and formatting of the technical content.
08/05/2011	3.2	No change	No changes to the meaning, language, or formatting of the technical content.
10/07/2011	3.3	Minor	Clarified the meaning of the technical content.

Table of Contents

1	Introduction	4
1.1	Glossary	4
1.2	References.....	4
1.2.1	Normative References.....	4
1.2.2	Informative References	4
1.3	Overview	5
1.4	Relationship to Other Protocols.....	5
1.5	Prerequisites/Preconditions	5
1.6	Applicability Statement.....	5
1.7	Versioning and Capability Negotiation.....	5
1.8	Vendor-Extensible Fields.....	5
1.9	Standards Assignments	5
2	Messages.....	6
2.1	Transport.....	6
2.2	Message Syntax	6
3	Protocol Details	7
3.1	Common Details	7
3.1.1	Abstract Data Model	7
3.1.2	Timers	8
3.1.3	Initialization	8
3.1.4	Higher-Layer Triggered Events.....	8
3.1.5	Message Processing Events and Sequencing Rules.....	8
3.1.6	Timer Events	8
3.1.7	Other Local Events	8
4	Protocol Examples.....	9
5	Security.....	10
5.1	Security Considerations for Implementers.....	10
5.2	Index of Security Parameters	10
6	Appendix A: Product Behavior.....	11
7	Change Tracking.....	12
8	Index	14

1 Introduction

This document specifies Mailbox Migration, which involves the interaction between a client and server services during and after a move mailbox operation. Move mailbox operations are critical administrative operations that are used on a regular basis to move mailboxes between servers.

1.1 Glossary

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

**Active Directory
domain
Hypertext Transfer Protocol (HTTP)
remote procedure call (RPC)**

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

**mailbox
remote operation (ROP)
store
Store object
Uniform Resource Locator (URL)**

The following terms are specific to this document:

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

1.2 References

1.2.1 Normative References

We conduct frequent surveys of the normative references to assure their continued availability. If you have any issue with finding a normative reference, please contact dochelp@microsoft.com. We will assist you in finding the relevant information. Please check the archive site, <http://msdn2.microsoft.com/en-us/library/E4BD6494-06AD-4aed-9823-445E921C9624>, as an additional source.

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

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

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

[MS-OXDISCO] Microsoft Corporation, "[Autodiscover HTTP Service Protocol Specification](#)".

[MS-OXDCLI] Microsoft Corporation, "[Autodiscover Publishing and Lookup Protocol Specification](#)".

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

1.2.2 Informative References

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

1.3 Overview

This document specifies how a client communicates with server services during and after a **mailbox** move.

Move mailbox is an administrative operation during which a mailbox is moved from one server mailbox database to another server mailbox database. The source and the destination mailbox databases might be on the same server, or on two different servers. If the source and destination mailboxes are on different servers, the two servers might be in the same **Active Directory** directory service forest or in a different Active Directory forest.

1.4 Relationship to Other Protocols

The specification relies on understanding how **remote operations (ROPs)** are transmitted to the server using the underlying **RPC** transport as defined in [\[MS-OXCROPS\]](#). It also relies on understanding how to work with the Autodiscover **HTTP** service as defined in [\[MS-OXDISCO\]](#) and on how to work with **Store objects** as defined in [\[MS-OXCSTOR\]](#).

1.5 Prerequisites/Preconditions

None.

1.6 Applicability Statement

None.

1.7 Versioning and Capability Negotiation

None.

1.8 Vendor-Extensible Fields

None.

1.9 Standards Assignments

None.

2 Messages

2.1 Transport

During and following a mailbox move the client can send and receive data from two server services. The protocol between the client and the server information **store** is specified in [\[MS-OXCROPS\]](#). The protocol between the client and Autodiscover on the server is specified in [\[MS-OXDISCO\]](#).

2.2 Message Syntax

Message syntax is defined in [\[MS-OXCROPS\]](#) and [\[MS-OXDISCO\]](#).

3 Protocol Details

3.1 Common 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 specification does not mandate that implementations adhere to this model as long as their external behavior is consistent with that described in this specification.

When the move mailbox process starts, the server information store service invalidates any Store object that the client might currently have active for the mailbox being moved. Any subsequent attempt from the client to use this Store object for sending new ROPs to the server will result in a failure, as specified in [\[MS-OXCROPS\]](#). A mailbox in the process of being moved is locked for client access for the entire duration of the move; any attempt to establish a new Store object for such a mailbox results in a failure with error code `ecMailboxInTransit` ([\[MS-OXCDATA\]](#) section 2.4), as specified in [\[MS-OXCSTOR\]](#).

After the mailbox is moved to the new server the client can again open a Store object for the mailbox. The client will first try to connect to the original location of the mailbox, based on the cached server name it has stored in a client profile.

If the mailbox is moved to another mailbox database on the same server, the request to open the store provider for this mailbox succeeds.

If the mailbox is moved to a different server, at the time the client connects to the original server, the original server detects that it doesn't host the mailbox being requested and redirects the client to the new location. First, the server retrieves the new location of the mailbox.

If the new location is on a server in the same Active Directory forest as the original location, then the server returns error code `ecWrongServer` in a **RopLogon** ROP redirect response buffer, as specified in [\[MS-OXCROPS\]](#) section 2.2.3.1.4, to redirect the client to the new server.

If the new location is in a different Active Directory forest than the Active Directory forest for the original location, then the server SHOULD<1> return error code `ecUnknownUser` (as specified in [\[MS-OXCDATA\]](#) section 2.4) to a **ROPLogon** ROP request to indicate to the client that it has to find another server.

In this event, the client SHOULD<2> perform client Autodiscover to determine whether a better server name is available. The Autodiscover services on the server side can be configured such that referrals to other Active Directory forests are returned, and the client then performs Autodiscover service lookups against these new services to determine the correct server configuration settings. When settings are returned, the client will use these settings to connect and update the client side profile with the new mailbox server name upon successful connection. The Autodiscover protocol and referral mechanisms are specified in [\[MS-OXDCLI\]](#).

The Autodiscover service is used in the same way that it is used at account configuration time, with one exception. At account configuration time, because there is only an e-mail address, the **EMailAddress** element is sent in the request. For cross-forest moves, the previous legacy **domain** name is available so the **LegacyDN** element is sent in the request. This is sent to the source server, which returns a **RedirectUrl** element with the **URL** of the Autodiscover service of the destination server. Autodiscover is used against this new URL (still using the same legacy domain name). The Autodiscover response has all the data required to connect to the new server, including a new

legacy domain name, as specified in [\[MS-OXDCLI\]](#) section 2.2.3. For more details about the Autodiscover response, see [\[MS-OXDCLI\]](#) section 3.2.8. In the client, the mail profile stored in the registry is updated. Any other client would update whatever mechanism they use to persist the server settings with the data from the Autodiscover result.

3.1.2 Timers

None.

3.1.3 Initialization

None.

3.1.4 Higher-Layer Triggered Events

None.

3.1.5 Message Processing Events and Sequencing Rules

None.

3.1.6 Timer Events

None.

3.1.7 Other Local Events

None.

4 Protocol Examples

Mailbox migration cannot be shown in an example.

5 Security

5.1 Security Considerations for Implementers

None.

5.2 Index of Security Parameters

None.

6 Appendix A: Product Behavior

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

- Microsoft® Exchange Server 2003
- Microsoft® Exchange Server 2007
- Microsoft® Exchange Server 2010
- Microsoft® Office Outlook® 2007
- Microsoft® Outlook® 2010

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

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

[<1> Section 3.1.1:](#) Exchange 2003 returns the ecLoginFailure error code ([\[MS-OXCDATA\]](#) section 2.4).

[<2> Section 3.1.1:](#) Office Outlook 2007 and Outlook 2010 invoke the Autodiscover service for either the ecUnknownUser or ecLoginFailure error code.

7 Change Tracking

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Section	Tracking number (if applicable) and description	Major change (Y or N)	Change type
3.1.1 Abstract Data Model	Updated server version behavior related to the return of error code ecLoginFailure.	N	Content updated.
3.1.1 Abstract Data Model	Added information about when a client performs Autodiscover, and clarified that Autodiscover is not supported in Outlook 2003.	N	Content updated.
3.1.1 Abstract Data Model	Updated content to indicate server response using the RopLogon ROP redirect response buffer rather than the "Wrong Server Buffer data structure".	N	Content updated.
3.1.1 Abstract Data Model	Updated the description of the response from the Autodiscover service to include a normative reference to [MS-OXDCLI] and removed account configuration details.	N	Content updated.
3.1.1 Abstract Data Model	Added an informative reference to [MS-OXCDATA] to the product behavior note.	N	Product behavior note updated.
3.1.1 Abstract Data Model	Added a normative reference to [MS-OXCDATA].	N	Content updated.

8 Index

A

[Applicability](#) 5

C

[Capability negotiation](#) 5

[Change tracking](#) 12

F

[Fields - vendor-extensible](#) 5

G

[Glossary](#) 4

I

[Implementer - security considerations](#) 10

[Index of security parameters](#) 10

[Informative references](#) 4

[Introduction](#) 4

M

Messages

[transport](#) 6

N

[Normative references](#) 4

O

[Overview \(synopsis\)](#) 5

P

[Parameters - security index](#) 10

[Preconditions](#) 5

[Prerequisites](#) 5

[Product behavior](#) 11

R

References

[informative](#) 4

[normative](#) 4

[Relationship to other protocols](#) 5

S

Security

[implementer considerations](#) 10

[parameter index](#) 10

[Standards assignments](#) 5

T

[Tracking changes](#) 12

[Transport](#) 6

V

[Vendor-extensible fields](#) 5

[Versioning](#) 5