

# [MS-OXMVMBX]: Mailbox Migration

---

## Intellectual Property Rights Notice for Open Specifications Documentation

- **Technical Documentation.** Microsoft publishes Open Specifications documentation for protocols, file formats, languages, standards as well as overviews of the interaction among each of these technologies.
- **Copyrights.** This documentation is covered by Microsoft copyrights. Regardless of any other terms that are contained in the terms of use for the Microsoft website that hosts this documentation, you may make copies of it in order to develop implementations of the technologies described in the Open Specifications and may distribute portions of it in your implementations using these technologies or your documentation as necessary to properly document the implementation. You may also distribute in your implementation, with or without modification, any schema, IDL's, or code samples that are included in the documentation. This permission also applies to any documents that are referenced in the Open Specifications.
- **No Trade Secrets.** Microsoft does not claim any trade secret rights in this documentation.
- **Patents.** Microsoft has patents that may cover your implementations of the technologies described in the Open Specifications. Neither this notice nor Microsoft's delivery of the documentation grants any licenses under those or any other Microsoft patents. However, a given Open Specification may be covered by Microsoft's Open Specification Promise (available here: <http://www.microsoft.com/interop/osp>) or the Community Promise (available here: <http://www.microsoft.com/interop/cp/default.msp>). If you would prefer a written license, or if the technologies described in the Open Specifications are not covered by the Open Specifications Promise or Community Promise, as applicable, patent licenses are available by contacting [iplq@microsoft.com](mailto:iplq@microsoft.com).
- **Trademarks.** The names of companies and products contained in this documentation may be covered by trademarks or similar intellectual property rights. This notice does not grant any licenses under those rights.
- **Fictitious Names.** The example companies, organizations, products, domain names, e-mail addresses, logos, people, places, and events depicted in this documentation are fictitious. No association with any real company, organization, product, domain name, email address, logo, person, place, or event is intended or should be inferred.

**Reservation of Rights.** All other rights are reserved, and this notice does not grant any rights other than specifically described above, whether by implication, estoppel, or otherwise.

**Tools.** The Open Specifications do not require the use of Microsoft programming tools or programming environments in order for you to develop an implementation. If you have access to Microsoft programming tools and environments you are free to take advantage of them. Certain Open Specifications are intended for use in conjunction with publicly available standard specifications and network programming art, and assumes that the reader either is familiar with the aforementioned material or has immediate access to it.

## 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	3.1.1	No change	No changes to the meaning, language, or formatting of the technical content.
11/03/2010	3.1.1	No change	No changes to the meaning, language, or formatting of the technical content.
03/18/2011	3.1.1	No change	No changes to the meaning, language, and formatting of the technical content.

# Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>4</b>
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
<b>2</b>	<b>Messages.....</b>	<b>6</b>
2.1	Transport.....	6
2.2	Message Syntax .....	6
<b>3</b>	<b>Protocol Details .....</b>	<b>7</b>
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
<b>4</b>	<b>Protocol Examples.....</b>	<b>9</b>
<b>5</b>	<b>Security.....</b>	<b>10</b>
5.1	Security Considerations for Implementers.....	10
5.2	Index of Security Parameters .....	10
<b>6</b>	<b>Appendix A: Product Behavior.....</b>	<b>11</b>
<b>7</b>	<b>Change Tracking.....</b>	<b>12</b>
<b>8</b>	<b>Index .....</b>	<b>13</b>

# 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](mailto: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-OXCROPS] Microsoft Corporation, "[Remote Operations \(ROP\) List and Encoding Protocol Specification](#)", June 2008.

[MS-OXCSTOR] Microsoft Corporation, "[Store Object Protocol Specification](#)", June 2008.

[MS-OXDISCO] Microsoft Corporation, "[Autodiscover HTTP Service Protocol Specification](#)", June 2008.

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

[MS-GLOS] Microsoft Corporation, "[Windows Protocols Master Glossary](#)", March 2007.

### 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`, 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, the server then uses error code `ecWrongServer` and the **Wrong Server Buffer** data structure on a **ROPLogon** ([\[MS-OXCROPS\]](#) section 2.2.3.1) response to redirect the caller to the new server.

If the new location is in a different Active Directory forest than the Active Directory forest for the original location, the server then uses only an error code on **ROPLogon** to tell the client that it has to find another server; the error code is `ecUnknownUser`.[<1>](#)

In this event the client will perform client Autodiscover to determine if a better server name is available.[<2>](#) 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 right 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 [\[MS-OXDSCli\]](#).

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, possibly, a new legacy domain name. 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® Office Outlook® 2003
- Microsoft® Exchange Server 2003
- Microsoft® Office Outlook® 2007
- Microsoft® Exchange Server 2007
- Microsoft® Outlook® 2010
- Microsoft® Exchange Server 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 ecLoginFailure.

[<2> Section 3.1.1:](#) Office Outlook 2003 does not support the Autodiscover service. Office Outlook 2007 and Outlook 2010 will invoke the Autodiscover service for either the ecUnknownUser or ecLoginFailure error code, but prefers to see the ecUnknownUser error code.

## 7 Change Tracking

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

## 8 Index

### 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](#) 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