

# User Guide

## NetIQ® Exchange Migrator

December 2011



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# About This Book and the Library

The user guide provides conceptual information about the Exchange Migrator product (NetIQ Exchange Migrator). This book defines terminology and various related concepts.

## Intended Audience

This book provides information for individuals responsible for understanding NetIQ Exchange Migrator concepts and for individuals migrating Microsoft Exchange environments.

## Other Information in the Library

The library provides the following information resources:

### Help

Provides context-sensitive information and step-by-step guidance for common tasks, as well as definitions for each field on each window.

### Release Notes

Outlines why you should install the current version and identifies any known issues.

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# Conventions

The library uses consistent conventions to help you identify items throughout the documentation. The following table summarizes these conventions.

Convention	Use
<b>Bold</b>	<ul style="list-style-type: none"><li>• Window and menu items</li><li>• Technical terms, when introduced</li></ul>
<i>Italics</i>	<ul style="list-style-type: none"><li>• Book and CD-ROM titles</li><li>• Variable names and values</li><li>• Emphasized words</li></ul>
Fixed Font	<ul style="list-style-type: none"><li>• File and folder names</li><li>• Commands and code examples</li><li>• Text you must type</li><li>• Text (output) displayed in the command-line interface</li></ul>
Brackets, such as <code>[value]</code>	<ul style="list-style-type: none"><li>• Optional parameters of a command</li></ul>
Braces, such as <code>{value}</code>	<ul style="list-style-type: none"><li>• Required parameters of a command</li></ul>
Logical OR, such as <code>value1   value2</code>	<ul style="list-style-type: none"><li>• Exclusive parameters. Choose one parameter.</li></ul>

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# About NetIQ Corporation

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# Chapter 1

## Introduction

Enterprise systems and applications are larger and more complex than ever before. As this trend continues, network administrators increasingly struggle to simplify administration tasks, increase security, and reduce network costs. Adding to this already complex situation is the need to migrate to newer technology as it becomes available and more cost-effective.

The newest versions of Microsoft Exchange provide some of the most compelling reasons to migrate. However, migrating a Microsoft Exchange server can be complex, time-consuming, and error-prone. NetIQ Exchange Migrator enables administrators of large, complex Microsoft Exchange environments to simplify the migration process, reducing the impact, time, and cost of migration. NetIQ Exchange Migrator offers a solid migration solution and provides seamless coexistence during your migration so users have uninterrupted access to mail, contacts, public folders, and directory information.

## What Is NetIQ Exchange Migrator?

NetIQ Exchange Migrator is a powerful application that lets you migrate mailboxes, distribution lists, contacts, public folders, and directory information from one Microsoft Exchange server to another. As part of a migration, NetIQ Exchange Migrator updates calendar and public folder permissions and reconciles distribution list membership.

With an intuitive, easy-to-use interface and an advanced engine, NetIQ Exchange Migrator helps you complete your migration smoothly and efficiently. The product works well for both small and large Microsoft Exchange migrations as it allows you to easily organize information using projects. Project-based migrations allow you to quickly apply migration options and scripts to specific sets of objects.

NetIQ Exchange Migrator also enables you to do the following:

- Migrate only the mailboxes, distribution lists, contacts, public folders, and directory information you select rather than migrating all the objects on the source server. This capability allows you to migrate objects in stages rather than all at once.
- Map source objects to existing target objects based on the `sIDHistory` or `sAMAccountName` attributes or a Domain Migration Administrator mapping file.
- Customize your migration using triggers that can run scripts before and after migrating each object.
- Synchronize migrated mailboxes and public folders between the source and target Microsoft Exchange organizations.
- Synchronize directory information bi-directionally between the source and target servers.
- Using a command-line interface (CLI), schedule migration tasks to occur on specific days and times that are convenient for your organization.

- Update client mailbox profiles from a central console using a logon script.
- Migrate directory permissions from the source to the target server.

NetIQ Exchange Migrator includes the following utilities:

<b>NetIQ Pre-Migration Assessment Utility</b>	Enables you to run various tests in your environment to assess the state of migration prerequisites such as network connectivity, permissions for source and target servers, and running services.
<b>NetIQ Coexistence Utility</b>	Enables migrated users to schedule appointments with users who have not yet migrated.
<b>NetIQ SharePoint Migration Utility</b>	Allows you to migrate Microsoft Exchange public folders to SharePoint.

## How You Benefit from Using NetIQ Exchange Migrator

NetIQ Exchange Migrator can help you quickly and easily migrate your Microsoft Exchange Server environment.

### Simplifies Assessment and Preparation

NetIQ Exchange Migrator helps you assess your source and target Microsoft Exchange organizations. Whether you are consolidating Microsoft Exchange organizations or moving to a newer version of Microsoft Exchange, you can use NetIQ Exchange Migrator to assess your environment and complete your migration.

NetIQ Exchange Migrator automatically discovers mailboxes, distribution lists, contacts, public folders, and directory information to accelerate and simplify your planning. NetIQ Exchange Migrator also provides comprehensive reporting on your source and target Microsoft Exchange organizations to help you organize your migration planning. As you migrate objects, NetIQ Exchange Migrator continues to collect information to help you evaluate your progress.

### Organizes and Directs the Migration

The NetIQ Exchange Migrator console provides a step-by-step path through your migration plan and clearly outlined tasks. The console task pad categorizes tasks into pre-migration, migration, and post-migration activities for better management of your migration. Wizards guide you through each task, while reports track the progress of your migration.

NetIQ Exchange Migrator lets you group mailboxes, distribution lists, contacts, and public folders into manageable projects. You select the objects you want to migrate, and migrate projects at any time. For example, using the NetIQ Exchange Migrator command-line interface (CLI) and the Microsoft Windows Schedule service, you can schedule migrations to occur during off-peak network hours.

### Integrates with Other NetIQ Migration Products

You can implement a comprehensive migration solution by partnering NetIQ Exchange Migrator with Domain Migration Administrator. For example, you can use Domain Migration Administrator to migrate existing Microsoft Windows user accounts and their permissions. NetIQ Exchange Migrator can import the user account information from Domain Migration Administrator and map the Microsoft Exchange mailboxes to the correct target user accounts, including the associated mailbox data and permissions.

In addition, NetIQ Corporation provides comprehensive administration tools, such as Directory and Resource Administrator and Exchange Administrator, that let you administer mixed-mode or native-mode enterprises using a rules-based delegation model. These tools work during the transition phase and continue to provide comprehensive services when you finalize your move to your new Microsoft Windows environment.

## Enables a Smooth Transition

NetIQ Exchange Migrator provides the tools you need to easily manage your intra-organization or cross-organization migration plan. Intra-forest migration has traditionally been a challenge for companies who want to restructure their Microsoft Exchange organization. NetIQ Exchange Migrator solves this problem by letting you migrate mailboxes between servers within the same forest or even between servers within an administrative group, simplifying and consolidating your organization structure. Using NetIQ Exchange Migrator, you can organize and streamline your current Microsoft Exchange organization before migrating to newer Microsoft Exchange versions.

NetIQ Exchange Migrator can help you plan an incremental migration, migrating only the Microsoft Exchange objects you designate. As you migrate additional mailboxes, distribution lists, contacts, public folders, and directory information, NetIQ Exchange Migrator updates source and target organizations, providing a granular and reliable migration.

## Allows Simultaneous Operation of Microsoft Exchange Organizations

With NetIQ Exchange Migrator you can operate your source and target organizations in parallel to meet your deadlines for migration and immediately take advantage of the new organization structure and features. You can adjust the target organization under real-world conditions as you incrementally migrate users.

NetIQ Exchange Migrator allows you to synchronize directories, permissions, mailboxes, and public folders between the source and target Microsoft Exchange organizations so you can maintain user connectivity while operating your source and target organizations in parallel. You can manually run synchronizations or schedule synchronizations to run as often as necessary.

- Directory synchronization allows migrated users to communicate with users still on the source organization. You can synchronize directory information one-way or bi-directionally between the source and target organizations.
- You can synchronize mailbox information one way from the source to the target organization. One-way mailbox synchronization copies new messages and permissions added to the source mailbox after migration, so when the user logs into the target mailbox all messages and permissions are current.
- You can synchronize public folders and associated permissions bi-directionally between the source and target organizations. Bi-directional public folder synchronization copies new messages posted to the public folder on the source and target organizations so that public folders and permissions in both organizations are the same.

# Getting Started

Thorough planning and testing prior to migration are essential to a successful migration in any organization. Ensure you identify your migration goals and resulting organization structure, and get input from the appropriate people in your organization.

Use the following checklist to help you get started planning and preparing your environment for migration.

<input checked="" type="checkbox"/>	Steps	Topic References
<input type="checkbox"/>	1. Review the trusted and untrusted migration scenarios that Exchange Migrator supports.	<ul style="list-style-type: none"><li>• <a href="#">“Supported Migration Scenarios”</a> on page 5</li></ul>
<input type="checkbox"/>	2. Review the requirements for installing and running NetIQ Exchange Migrator.	<ul style="list-style-type: none"><li>• <a href="#">“NetIQ Exchange Migrator Requirements”</a> on page 8</li></ul>
<input type="checkbox"/>	3. Install the Pre-Migration Assessment Utility and run tests to identify and address any potential issues in your environment.	<ul style="list-style-type: none"><li>• <a href="#">“Using the Pre-Migration Assessment Utility”</a> on page 73</li></ul>
<input type="checkbox"/>	4. Determine how you want to organize your migration and prepare a detailed and well-documented migration plan.	<ul style="list-style-type: none"><li>• <a href="#">“Pre-Migration Planning and Assessment”</a> on page 31</li></ul>
<input type="checkbox"/>	5. Assess your source and target Microsoft Exchange organizations.	<ul style="list-style-type: none"><li>• <a href="#">“Assessing Your Microsoft Exchange Environment”</a> on page 33</li></ul>
<input type="checkbox"/>	6. If you are performing a Windows domain migration, coordinate your Microsoft Exchange and domain migrations.	<ul style="list-style-type: none"><li>• <a href="#">“Coordinating Domain and Microsoft Exchange Migrations”</a> on page 34</li></ul>
<input type="checkbox"/>	7. Determine if any additional pre-migration configuration is required or recommended for your environment.	<ul style="list-style-type: none"><li>• <a href="#">“Customizing Migration Settings”</a> on page 37</li></ul>
<input type="checkbox"/>	8. Install NetIQ Exchange Migrator.	<ul style="list-style-type: none"><li>• <a href="#">“Installing or Upgrading NetIQ Exchange Migrator”</a> on page 16</li></ul>

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## Chapter 2

# Installing NetIQ Exchange Migrator

This section provides pre-installation information, such as hardware and software requirements and supported migration scenarios, and provides instructions for installing NetIQ Exchange Migrator. Review the topics in this section and ensure your environment meets all prerequisites before you begin installing the product.

## Supported Migration Scenarios

NetIQ Exchange Migrator migrates mailboxes, distribution lists, contacts, and public folders between two Microsoft Exchange servers, the **source server** and the **target server**.

NetIQ Exchange Migrator supports the following migration scenarios:

Source	Target	Supported Scenarios
Microsoft Exchange Server 2003 Service Pack 2 or later	Microsoft Exchange Server 2003 Service Pack 2 or later	<ul style="list-style-type: none"><li>• Cross-organization (also known as inter-forest) only</li><li>• Trusted domains only</li></ul>
Microsoft Exchange Server 2003 Service Pack 2 or later	Microsoft Exchange Server 2007 Service Pack 3 or later	<ul style="list-style-type: none"><li>• Cross-organization (also known as inter-forest)</li><li>• Intra-organization (also known as intra-forest)</li><li>• Trusted domains</li><li>• Untrusted domains</li></ul>
Microsoft Exchange Server 2003 Service Pack 2 or later	Microsoft Exchange Server 2010 Service Pack 1 or later	<ul style="list-style-type: none"><li>• Cross-organization (also known as inter-forest)</li><li>• Intra-organization (also known as intra-forest)</li><li>• Trusted domains</li><li>• Untrusted domains</li></ul>
Microsoft Exchange Server 2007 Service Pack 3 or later	Microsoft Exchange Server 2007 Service Pack 3 or later	<ul style="list-style-type: none"><li>• Cross-organization (also known as inter-forest)</li><li>• Intra-organization (also known as intra-forest)</li><li>• Trusted domains</li><li>• Untrusted domains</li></ul>

Source	Target	Supported Scenarios
Microsoft Exchange Server 2007 Service Pack 3 or later	Microsoft Exchange Server 2010 Service Pack 1 or later	<ul style="list-style-type: none"> <li>• Cross-organization (also known as inter-forest)</li> <li>• Intra-organization (also known as intra-forest)</li> <li>• Trusted domains</li> <li>• Untrusted domains</li> </ul>
Microsoft Exchange Server 2010 Service Pack 1 or later	Microsoft Exchange Server 2010 Service Pack 1 or later	<ul style="list-style-type: none"> <li>• Cross-organization (also known as inter-forest)</li> <li>• Intra-organization (also known as intra-forest)</li> <li>• Trusted domains</li> <li>• Untrusted domains</li> </ul>

#### Note

For all migrations where Microsoft Exchange Server 2010 is the target, NetIQ Exchange Migrator must be installed on a 64-bit computer joined to the target domain. For more information about requirements for the Exchange Migrator console computer, see [“Console Computer Software Requirements”](#) on page 9.

NetIQ Exchange Migrator supports multi-threading for all cross-organization trusted and untrusted migration scenarios. The default configuration is two threads per processor or processor core on the console computer when doing data migration. NetIQ Exchange Migrator takes advantage of the number of processors or processor cores on the console computer, and can significantly improve migration performance if you install the Exchange Migrator console on a multiprocessor or multi-core computer.

## Source and Target Software Requirements

NetIQ Exchange Migrator migrates mailboxes, distribution lists, contacts, and public folders between two Microsoft Exchange servers, the **source server** and the **target server**.

The minimum Microsoft Exchange service pack requirements for the source and target servers depend on your migration scenario. For example, if you are migrating from Microsoft Exchange Server 2003 to Microsoft Exchange Server 2007, you must migrate from Microsoft Exchange Server 2003 Service Pack 2 to Microsoft Exchange Server 2007 Service Pack 3. For more information about Microsoft Exchange service pack requirements, see [“Supported Migration Scenarios”](#) on page 5.

In addition to these requirements, NetBIOS/WINS support must be enabled in migration environments where Microsoft Exchange Server 2003 is running on the source or target server.

NetBIOS/WINS support is not required for the following migration scenarios (whether intra-organization or cross-organization):

- Microsoft Exchange Server 2007 to Microsoft Exchange Server 2007
- Microsoft Exchange Server 2007 to Microsoft Exchange Server 2010
- Microsoft Exchange Server 2010 to Microsoft Exchange Server 2010

# NetIQ Exchange Migrator Architecture

NetIQ Exchange Migrator consists of three main components:

- NetIQ Exchange Migrator console
- NetIQ Exchange Migrator engine
- Microsoft SQL Server database

Before you begin the NetIQ Exchange Migrator installation process, you should determine where you will install these components. You can install all three components on the same computer, or you can install the database on a separate computer.

NetIQ Exchange Migrator combines a variety of standard technologies to successfully migrate your Microsoft Exchange organization. The various supported technologies enable you to customize and automate your Microsoft Exchange migration. NetIQ Exchange Migrator supports a wide spectrum of open, extensible standards and services, including the following:

- Microsoft Management Console (MMC)
- Active Directory Service Interfaces (ADSI)
- Component Object Model (COM)
- Distributed Component Object Model (DCOM)
- Messaging Application Programming Interface (MAPI)
- Lightweight Directory Access Protocol (LDAP)
- Microsoft Windows PowerShell

## Supported Configurations

NetIQ Exchange Migrator can be installed either on the target Microsoft Exchange server or on a computer separate from either the source or target Microsoft Exchange servers. Both configurations offer about the same performance as long as the console is connected to the source and target servers through a fast network connection. However, if the console or the source server is on a slow network connection, the slow connection may affect data migration performance.

NetIQ Exchange Migrator streams messages, which are the bulk of all data, through the Exchange Migrator console. Since Exchange Migrator was designed to stream mailbox messages quickly and efficiently, no agent software is required on the source or target Exchange servers. Furthermore, the Exchange Migrator data stream is live and does not require export or import of PSTs to perform the data migration. There is no direct streaming from source to target unless Exchange Migrator is installed on the target server. So, if you install NetIQ Exchange Migrator on a separate computer, ensure that computer is connected via high speed LAN to the target server for best performance.

Whether you install NetIQ Exchange Migrator on the target server or on a completely separate computer, NetIQ Corporation highly recommends always installing NetIQ Exchange Migrator in the target domain. Ideally, the Exchange Migrator console computer should be connected to the same high speed switch as the target server.

## Understanding Installation Options

When you install NetIQ Exchange Migrator, the setup program provides a **Console Installation** option and a **Full Installation** option.

- *If you select **Console Installation***, the setup program installs only the NetIQ Exchange Migrator console on the local computer. If you select this option, you must have a NetIQ Exchange Migrator database already installed on another computer to which you can connect the console. This option does *not* perform a remote installation of the NetIQ Exchange Migrator database on another computer.
- *If you select **Full Installation***, the setup program installs the NetIQ Exchange Migrator console and a new NetIQ Exchange Migrator database on the local computer. Ensure you have a supported version of Microsoft SQL Server installed on the local computer before you begin the installation. The setup program prompts you for the SQL Server computer and instance when you select the Full Installation option.

*If you plan to use more than one NetIQ Exchange Migrator console to connect to the Exchange Migrator database*, first run the Full Installation option on the SQL Server computer to install the Exchange Migrator console and database, and then run only the Console Installation to install the console on additional computers and connect to the Exchange Migrator database.

## NetIQ Exchange Migrator Requirements

Before you install NetIQ Exchange Migrator, carefully review the installation requirements to ensure you have the necessary hardware, software, and permissions in your environment. You can verify many of the software and connectivity requirements by running tests in the NetIQ Pre-Migration Assessment Utility. For more information, see “[Using the Pre-Migration Assessment Utility](#)” on page 73.

For the most recent information about third party software requirements, see the NetIQ Exchange Migrator Supported Versions page at <https://www.netiq.com/support/em/supportedproducts/default.asp>.

### Console Computer Hardware Requirements

The computer where you install NetIQ Exchange Migrator is the **console computer**. You have the option to install NetIQ Exchange Migrator on either the source or target server or on a separate computer. However, NetIQ Corporation recommends always installing NetIQ Exchange Migrator in the target domain on a computer that is connected to the same high speed switch as the target server. For more information, see “[Supported Configurations](#)” on page 7.

Ensure the console computer meets or exceeds the requirements for the Windows operating system version installed on the computer. In addition, NetIQ Exchange Migrator requires the Microsoft Exchange Management tools to be installed on the console computer for all supported migration scenarios. Since the Microsoft Exchange Management tools may have hardware requirements that exceed the minimum operating system requirements, you should review the Microsoft Exchange documentation to ensure the console computer meets any additional hardware requirements for those tools.

NetIQ Exchange Migrator requires some disk space to accommodate the NetIQ Exchange Migrator log files and the NetIQ Exchange Migrator database. Use the Microsoft Exchange Management tools to check object size and calculate hard disk requirements. You may not be able to accurately predict the storage space you will need for log files. However, NetIQ Corporation recommends you have at least 30 MB of free space for log files.

NetIQ Exchange Migrator supports multi-threading for cross-organization trusted and untrusted migration scenarios, by default using two threads per processor or processor core on the console computer. If you install the Exchange Migrator console on a multiprocessor or multi-core computer, you can significantly improve migration performance.

## Console Computer Software Requirements

The following table describes the software requirements for the NetIQ Exchange Migrator console computer.

Software	Requirements
Operating system	<p>NetIQ Exchange Migrator requires one of the following operating systems on the console computer:</p> <ul style="list-style-type: none"> <li>• Microsoft Windows 7 (32- and 64-bit)</li> <li>• Microsoft Windows Server 2008 R2</li> <li>• Microsoft Windows Server 2008 (32- and 64-bit)</li> <li>• Microsoft Windows Vista (32- and 64-bit)</li> <li>• Microsoft Windows Server 2003 (32-bit)</li> <li>• Microsoft Windows XP (32- and 64-bit)</li> </ul> <p><b>Note:</b> For all migrations where Microsoft Exchange Server 2010 is the target, NetIQ Exchange Migrator must be installed on a computer running a 64-bit version of an operating system supported by the Microsoft Exchange Server 2010 Management tools (64-bit versions of Microsoft Windows 7, Microsoft Windows Server 2008, or Microsoft Windows Server 2008 R2).</p>
PowerShell	NetIQ Exchange Migrator requires PowerShell 2.0 installed on the console computer.
NetBIOS support	Depending on your migration scenario, NetBIOS/WINS support may be required on the console computer. For more information, see <a href="#">“Source and Target Software Requirements”</a> on page 6.
Database	<p>Before you install the NetIQ Exchange Migrator database on the same computer as the NetIQ Exchange Migrator console, ensure you are running a supported version of Microsoft SQL Server. For more information, see <a href="#">“Database Requirements”</a> on page 10.</p> <p><b>Note:</b> If you are installing multiple NetIQ Exchange Migrator consoles to connect to a single NetIQ Exchange Migrator database, the computers where you install only the console do not have to have SQL Server installed.</p>
Mail client	<p>NetIQ Exchange Migrator requires one of the following mail clients on the console computer:</p> <ul style="list-style-type: none"> <li>• Microsoft Outlook 2010 (32-bit version only)</li> <li>• Microsoft Outlook 2007</li> <li>• Microsoft Outlook 2003</li> </ul> <p><b>Note:</b> Microsoft Outlook 2007 or Microsoft Outlook 2010 (32-bit version only) is required for migrations to Microsoft Exchange Server 2007 or Microsoft Exchange Server 2010.</p>

Software	Requirements
Web browser	NetIQ Exchange Migrator requires one of the following Web browsers, with the latest service packs: <ul style="list-style-type: none"> <li>• Microsoft Internet Explorer 9.0</li> <li>• Microsoft Internet Explorer 8.0</li> <li>• Microsoft Internet Explorer 7.0</li> <li>• Microsoft Internet Explorer 6.0</li> <li>• Microsoft Internet Explorer 5.0</li> </ul>
Services	If you install the Exchange Migrator console directly on an Exchange server, the Microsoft Exchange System Attendant service must be running on the console computer before you begin your migration.
For migration to Microsoft Exchange Server 2003	Install the Microsoft Exchange 2003 System Manager tool from the Microsoft Exchange Server 2003 installation CD on the NetIQ Exchange Migrator computer. The version of the tools should match the target Microsoft Exchange Server version, including any service packs.
For migration to Microsoft Exchange Server 2007	Install the Microsoft Exchange Server 2007 Management tools from the Microsoft Exchange Server 2007 installation CD. The version of the tools should match the target Microsoft Exchange Server version, including any service packs. Ensure you have also installed all prerequisites for the Microsoft Exchange Server 2007 Management tools. For more information, see the Microsoft Exchange Server documentation.
For migration to Microsoft Exchange Server 2010	Install the Microsoft Exchange Server 2010 Management tools from the Microsoft Exchange Server 2010 installation CD. The version of the tools should match the target Microsoft Exchange Server version. Ensure you have also installed all prerequisites for the Microsoft Exchange Server 2010 Management tools. For more information, see the Microsoft Exchange Server documentation.

#### Note

Due to potential conflicts in various versions of Messaging Application Programming Interface (MAPI) programs installed by Microsoft Exchange or Microsoft Exchange System Manager 2003, installing NetIQ Exchange Migrator on a computer running that version may cause additional issues. For more information, see the following Microsoft Knowledge Base article: <http://support.microsoft.com/kb/266418>. These potential conflicts should not occur if you install NetIQ Exchange Migrator on a Microsoft Exchange 2007 server with Microsoft Exchange 2007 management tools, or on a Microsoft Exchange 2010 server with Microsoft Exchange 2010 management tools. For more information about recommended configurations, see “Supported Configurations” on page 7.

## Database Requirements

NetIQ Exchange Migrator requires Microsoft SQL Server for its database. You can use a single console or multiple consoles to access the NetIQ Exchange Migrator database. However, whether you plan to use a single console or multiple consoles, in order to create the Exchange Migrator database you must install a NetIQ Exchange Migrator console on the database computer.

If you plan to have several NetIQ Exchange Migrator consoles that connect to a single NetIQ Exchange Migrator database, first perform a full installation (NetIQ Exchange Migrator console and database) on your SQL Server database computer, and then perform console-only installations on the console computers. Ensure all consoles access the same NetIQ Exchange Migrator database. Using different databases can cause migration errors on the target Microsoft Exchange server.

Ensure you have installed one of the following supported versions of SQL Server on your database computer before you perform a full installation of the NetIQ Exchange Migrator console and database:

- Microsoft SQL Server 2008 R2 (32- and 64-bit)
- Microsoft SQL Server 2008 (32- and 64-bit)
- Microsoft SQL Server 2005 Service Pack 3 or later

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**Notes**

- Microsoft SQL Server Express is no longer available for installation from the NetIQ Exchange Migrator setup program, but it is still a supported edition. If you plan to use SQL Server Express, ensure you install it in your environment before you begin the Exchange Migrator installation.
  - Each version of Microsoft SQL Server has prerequisites you must install separately before you install SQL Server. Ensure you review the SQL Server requirements and install all prerequisites for the version you plan to use. For more information, see the Microsoft SQL Server documentation.
- 

If you use NetIQ Exchange Migrator to migrate Microsoft Exchange servers from an environment using a character set other than the Latin1-General character set, ensure you configure your database server to use the appropriate sort and collation settings for the environment. For more information about changing these settings, see the Microsoft SQL Server documentation.

## NetIQ Exchange Migrator Permission Requirements

The account you use to install and use NetIQ Exchange Migrator is called the **NetIQ Exchange Migrator user account**. The following sections list the permissions required to complete your migration using NetIQ Exchange Migrator.

For most migration scenarios, the NetIQ Exchange Migrator user account must be a member of the Domain Admins group instead of the organization Built-in\Administrators group because the scope of that group is limited to the specific domain instead of the entire forest. However, for trusted migration scenarios, the NetIQ Exchange Migrator user account must be a member of the Built-in\Administrators group because foreign domain users cannot be added to the Domain Admins group.

For all migration scenarios marked with an asterisk (\*) below, the account used to connect to the source Exchange server must be a local administrator on that Exchange server. When the source server is both an Exchange server and a domain controller, the account used to connect to the source server must be a member of the Built-in\Administrators group.

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**Note**

The source profile used in the NetIQ Exchange Migrator console should be the profile of the source account used to connect to the Exchange server. The target profile should be the profile of the target account used for migration.

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## Permission Requirements for Untrusted Cross-Organization Migrations

For untrusted migration scenarios, you must specify a user account that has the required permissions in the source domain and run NetIQ Exchange Migrator using an account that has the appropriate permissions in the target domain.

The following permissions are required for the specified Exchange version, regardless of whether the Exchange server is the source or target.

### **Exchange Server 2003**

- Member of the Domain Admins group
- Member of the Enterprise Admins group
- Exchange Full Administrator
- Member of the Exchange Server Local Admins group\*

### **Exchange Server 2007**

- Member of the Domain Admins group
- Member of the Enterprise Admins group
- Member of the Exchange Organization Administrators group
- Member of the Exchange Server Local Admins group\*

### **Exchange Server 2010**

- Member of the Domain Admins group
- Member of the Enterprise Admins group
- Member of the Organization Management group
- Member of the Exchange Server Local Admins group\*

## **Additional Permission Requirements for Trusted Cross-Organization Migrations**

For trusted cross-organization migration scenarios, the following permissions are required for the Exchange Migrator user account *in the source domain*:

### **Exchange Server 2003**

- Exchange Full Administrator
- Member of the Exchange Server Local Admins group\*
- Member of the Built-in\Administrators domain group

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**Note**

Membership in the Built-in\Administrators domain group is an additional permission requirement that is not applicable to untrusted cross-organization migration scenarios.

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### **Exchange Server 2007 and Exchange Server 2010**

- For Exchange Server 2007 and Exchange Server 2010 as the source, NetIQ Exchange Migrator always requires source domain credentials.
- For Exchange Server 2007 and Exchange Server 2010 as the target, NetIQ Exchange Migrator requires the same permissions on the target as for untrusted migrations.

## Permission Requirements for Intra-Organization Migrations

For intra-organization migrations, the following permissions are required for the Exchange Migrator user account.

### Source (Exchange Server 2003 only)

- Exchange Server Local Administrator on the source Exchange server\*
- Exchange Full Administrator

### Target

- Member of the Domain Admins group

### Organization-wide

- Member of the Enterprise Admins group
- For Exchange Server 2007, member of the Exchange Organization Administrators group
- For Exchange Server 2010, member of the Organization Management group

## Database Permission Requirements

NetIQ Exchange Migrator supports both SQL authentication and Windows authentication for the SQL Server database. Whether you use SQL or Windows authentication, the account you specify must have the System Administrator server role to create or access the NetIQ Exchange Migrator database.

## Verifying Your Domain Name Service

Verify your Domain Name Service (DNS) is working correctly before attempting to migrate objects. A DNS that is not working correctly can cause problems with your migration.

You can use the NSLOOKUP command to identify DNS problems. To verify correct operation of your DNS, use the NSLOOKUP command from the command prompt of the source Microsoft Exchange server.

Command	Example
NSLOOKUP <i>targetcomputer</i>	NSLOOKUP MYTARGET
NSLOOKUP <i>consolecomputer</i>	NSLOOKUP MYCONSOLE
NSLOOKUP <i>IP address for targetcomputer</i>	NSLOOKUP 10. 10. 221. 180
NSLOOKUP <i>IP address for consolecomputer</i>	NSLOOKUP 10. 10. 221. 181

Ensure you are able to resolve the IP address from the host name and the host name from the IP address from the NetIQ Exchange Migrator console computer to both the source and target Microsoft Exchange servers (if you have installed the NetIQ Exchange Migrator console on a separate computer). Repeat the same commands from the source and target Microsoft Exchange servers to the NetIQ Exchange Migrator console computer.

If any computer fails to resolve any of the other computers (either by IP address or host name), DNS may not be working and NetIQ Exchange Migrator may produce errors or fail during migration. Correct the DNS problems and then verify DNS is working properly by repeating the NSLOOKUP command from the source and target Microsoft Exchange servers and the NetIQ Exchange Migrator console computer (if it is installed on a separate computer).

## Microsoft Exchange Mailboxes and MAPI Profiles

To run NetIQ Exchange Migrator, the NetIQ Exchange Migrator user account must have access to the GAL and Public Folders on the source and target Microsoft Exchange servers. To access the GAL, the NetIQ Exchange Migrator user account must be mail-enabled and have an associated MAPI profile. For the best results, create the NetIQ Exchange Migrator user account in the target domain with its own mailbox, and give this account access to a mailbox in the source domain.

**To ensure your NetIQ Exchange Migrator user account has the required access:**

1. Mail-enable the NetIQ Exchange Migrator user account in the target domain.
2. Create a mailbox or use an existing mailbox in the source domain and give the NetIQ Exchange Migrator user account access to this mailbox. Use Active Directory Users and Computers (ADUC) or the appropriate Exchange management tool to grant access permissions.
3. Using the Mail utility in Control Panel, create a mail profile for these mailboxes on the NetIQ Exchange Migrator console computer.

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### Note

*If you are going to perform a migration between untrusted domains*, ensure you save the password of the source mail profile. To perform an error-free migration of distribution lists between untrusted domains, NetIQ Exchange Migrator requires the source mailbox profile used to perform the migration to have a saved password.

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4. Open the source and target mail profiles with Microsoft Outlook at least once.

## Public Folder Permission Requirements

Before you synchronize migrated public folders, ensure either the source mailbox or the public folder Default role has at least Folder Visible permissions on the source public folders. You can view and change public folder properties in Microsoft Outlook.

The target mailbox owns public folders you create as part of the migration. Ensure the NetIQ Exchange Migrator user account has the following permissions on the target public folder store specified in the migration project:

- Create top-level public folder
- View complete folder path
- Create subfolders on existing trees where NetIQ Exchange Migrator will create public folders

NetIQ Exchange Migrator modifies target public folder permissions as long as the public folder corresponds to a migrated mailbox. When individual source and target public folder client permissions entries conflict, NetIQ Exchange Migrator sets client permissions on the target public folders to be equal to the client permissions of the source public folders. NetIQ Exchange Migrator adds new permissions to the existing permissions on the target public folder if it does not detect a conflicting permission.

## Licensing Considerations

NetIQ Exchange Migrator provides a trial license that allows you to explore the features and benefits of using NetIQ Exchange Migrator. After purchasing a license, you need to install that license. A purchased license enables you to migrate a specified number of mailboxes.

## Using a Trial License

A trial license enables NetIQ Exchange Migrator to operate for 30 days from the initial installation. With this license, you can migrate up to 50 mailboxes. However, you can migrate an unlimited number of distribution lists, contacts, and public folders. Migrating mailbox messages and object permissions does not deduct from the trial license limit of 50 mailboxes. When the trial license expires or if you attempt to migrate more than the 50 mailbox limit, NetIQ Exchange Migrator no longer migrates mailboxes.

If you want to migrate more than 50 mailboxes, you can upgrade the trial license to a full license. Contact your local NetIQ sales representative to obtain a full license file for the number of mailboxes you specify.

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**Note**

Any mailboxes that you migrated using a trial license count against the purchased license.

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## Installing a Purchased License

A purchased license enables NetIQ Exchange Migrator to operate within the license limits. Each migrated mailbox deducts from the number of mailboxes available for migration. Migrating mailbox messages and object permissions does not deduct from the license count. Undoing a migration restores the number of mailboxes available for migration. Keep a backup copy of your license key file in a separate folder.

**To install a purchased license:**

1. Log on to the NetIQ Exchange Migrator console computer with the NetIQ Exchange Migrator user account.
2. Copy the purchased license key file to a folder of your choice. Keep a backup copy of your license key file in a separate folder.
3. Start NetIQ Exchange Migrator.
4. Click **Exchange Migrator** in the left pane.
5. On the View menu, click **License Information**.
6. Click **Upgrade License**.
7. Browse to the folder containing the license key file and select it.
8. Click **Open**.
9. Click **OK**.

## Viewing Your License Information

You can view information about your currently installed license. This information includes the expiration date, the number of mailboxes migrated, and the total number of mailboxes permitted to be migrated.

**To view your license information:**

1. Click **Exchange Migrator** in the left pane of the main window.
2. On the View menu, click **License Information**.

# Installing or Upgrading NetIQ Exchange Migrator

If your environment meets the requirements listed in this chapter, you are ready to install NetIQ Exchange Migrator. For more information about the minimum requirements to install and run NetIQ Exchange Migrator, see [“NetIQ Exchange Migrator Requirements”](#) on page 8.

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## Note

Before you begin installation, verify you have a supported version of Microsoft SQL Server installed in your environment, and you know the login credentials for the account the Exchange Migrator console will use to connect to the database. You will need to provide this information when you install Exchange Migrator. For more information, see [“Database Requirements”](#) on page 10 and [“NetIQ Exchange Migrator Permission Requirements”](#) on page 11.

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If you plan to install NetIQ Exchange Migrator across a Terminal Server connection, use Add/Remove Programs from Control Panel instead of running the setup program on the installation CD. NetIQ Exchange Migrator does not support installation using Terminal Server from a mapped network drive.

## Installing NetIQ Exchange Migrator

Complete the following steps to install NetIQ Exchange Migrator for the first time. For more information about installation options, see [“Understanding Installation Options”](#) on page 8.

### To install NetIQ Exchange Migrator:

1. Log on to the computer where you want to install NetIQ Exchange Migrator with the NetIQ Exchange Migrator user account. For more information about permission requirements for this account, see [“NetIQ Exchange Migrator Permission Requirements”](#) on page 11.
2. Run Setup.exe in the root folder of the installation kit.
3. In the navigation pane, click **Check Version**. This option checks the product version in the installation kit against the newest available product version on the NetIQ Web site to verify you are installing the latest version.
4. In the navigation pane, click **Start Installation**.
5. *If you receive a security warning that the publisher of the setup.exe file cannot be identified, click Run.*
6. Click **Next**.
7. Review the license agreement window. If you accept the license agreement, click **Next**.
8. In the Select Installation Type window, specify one of the following:
  - a. *If you want to install both the Exchange Migrator console and a new NetIQ Exchange Migrator database on the local computer, select the Full Installation option and then click Next.*
  - b. *If you want to install only the Exchange Migrator console and connect the console to an existing NetIQ Exchange Migrator database, select the Console Installation option and then click Next.*

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## Note

Do not use the **Console Installation** option to connect to an Exchange Migrator database from a previous version of the product. Ensure you have upgraded your database to the current version before you connect to it from a console on a different computer.

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9. *If you want to change the default installation folder*, click **Browse** and select the folder where you want to install NetIQ Exchange Migrator.
10. Click **Next**.
11. *If you do not have the required runtime components already installed*, the setup program installs the Microsoft Visual C++ 2005 redistributable package and Microsoft .Net Framework 2.0. Click **Yes** to accept the terms of the license agreement for the redistributable package.
12. *If you want to install the trial license*, select **Install Trial License**. Otherwise, select **Install Custom License Key File**, and then browse to and select the license key file. For more information about licensing, see “[Licensing Considerations](#)” on page 14.
13. Enter the name of the SQL Server computer and instance, and then click **Next**.
14. *If you selected the Full Installation option*, verify the name of the SQL Server computer and the default name for the new NetIQ Exchange Migrator database, or specify a different name, and then click **Next**.
15. *If you selected the Console Installation option*, complete the following steps:
  - a. Type the name of the SQL Server computer and instance that contains the NetIQ Exchange Migrator database you want to use, and then click **Next**.
  - b. Type the name of the existing Exchange Migrator database, and then click **Next**.
16. Specify whether you want to use SQL or Windows authentication to connect to SQL Server.
  - *If you specified SQL authentication*, type the user name and password of an account that has the system administrator server role on the Microsoft SQL Server database server.
  - *If you specified Windows authentication*, the setup program uses your login account credentials. Ensure your login account has the system administrator server role on the Microsoft SQL Server database server.
17. Click **Next**. The setup program verifies the connection to SQL Server using the credentials you specified.
18. Click **Next** again to begin the installation.
19. Follow the instructions until you complete the NetIQ Exchange Migrator installation process.

You can also install the NetIQ Coexistence Utility and NetIQ SharePoint Migration Utility. For more information about the NetIQ Coexistence Utility, see the *NetIQ Coexistence Utility Release Notes*. For more information about the NetIQ SharePoint Migration Utility, see the *Migrating Microsoft Exchange Public Folders to SharePoint Technical Reference*. These documents are in the NetIQ Exchange Migrator installation kit.

## Upgrading from Previous Versions of NetIQ Exchange Migrator

This version supports upgrading the NetIQ Exchange Migrator console and database from NetIQ Exchange Migrator 8.0, with or without Hotfix 73042 or Hotfix 73196. To upgrade your environment, follow the steps provided for a new installation. Ensure you log on using the existing NetIQ Exchange Migrator and SQL Server account credentials, and follow the instructions in the installation wizard. For more information about the installation steps, see “[Installing NetIQ Exchange Migrator](#)” on page 16.

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### Note

*If you have defined a migration project in an existing NetIQ Exchange Migrator installation and started performing the migration defined by that project*, ensure you complete the migration before you upgrade NetIQ Exchange Migrator.

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## Chapter 3

# How NetIQ Exchange Migrator Works

To ensure you achieve the expected results when you run your Microsoft Exchange migration, you should understand the available migration options and how NetIQ Exchange Migrator treats different types of objects. The following sections explain the processes and logic that NetIQ Exchange Migrator follows in determining how to migrate objects. For more information about selecting appropriate migration options, see [“Selecting Appropriate Migration Options”](#) on page 50.

NetIQ Exchange Migrator migrates the following types of Microsoft Exchange objects:

- Mailboxes (including inbox rules, with some limitations)
- Contacts
- Distribution lists
- Public folders

Collectively these objects are known as *mail objects*. NetIQ Exchange Migrator also migrates the data and permissions associated with supported mail objects.

NetIQ Exchange Migrator does not migrate the following objects and permissions:

- Microsoft Exchange soft deletes
- Microsoft Exchange system folders
- Mail objects with a blank *Aliases* property value
- Newsgroups
- Active Directory permissions assigned to users and groups
- Options set on the mailbox Properties Protocols tab
- Microsoft Outlook forms
- Specific Delegate permissions:
  - Delegate receives copies of meeting-related messages sent to me
  - Automatically send a message to delegate summarizing these permissions
  - Delegate can see my private items
- Specific Public Folder properties:
  - Custom attributes
  - Notes field
  - Properties on the Limits tab

- Replication schedule
- Trust level
- Schema extensions, including those made for blackberry or fax software
- Single instance storage (SIS)

The **Reply-To** address on an email message is a read-only field. NetIQ Exchange Migrator does not translate Reply-To addresses to indicate the new email address of migrated mailboxes. To correct this problem, NetIQ Exchange Migrator migrates each mailbox, contact, and distribution list to the target Microsoft Exchange server with the respective source X500 address. For more information about how NetIQ Exchange Migrator handles Reply-To addresses, see [“Reply-To Addresses”](#) on page 28.

## Mailboxes

NetIQ Exchange Migrator lets you migrate mailboxes from a source Microsoft Exchange server to a target Microsoft Exchange server. NetIQ Exchange Migrator can migrate mailboxes with aliases using more than 20 characters, though Microsoft Windows may truncate long aliases.

## Mailbox Properties

NetIQ Exchange Migrator migrates key properties of the source mailbox, such as address, phone information, contacts, and mailbox size limits, in addition to the mailbox data. NetIQ Exchange Migrator migrates all the folders associated with a mailbox, such as Inbox, Journal, Calendar, and Task folders. You can reduce the amount of data NetIQ Exchange Migrator migrates if you ask users to delete items in their deleted and sent items folders.

When NetIQ Exchange Migrator sets the Reply-To address of a translated mailbox and cannot find an email address that matches the target Default Recipient Policy, NetIQ Exchange Migrator sets the translated property to a successfully translated secondary SMTP address. NetIQ Exchange Migrator uses the source SMTP address for the Reply-To address if NetIQ Exchange Migrator cannot find an available translated address.

In the following example, the Reply-To address will be the one that is marked as the Primary address. NetIQ Exchange Migrator sets the translated address as the Primary by default, but this is customizable. You can also set the source address as the Primary, or you can set the translated address or the generated address as the Primary using the format strings defined in the Migration Options wizard.

Source Exchange	Target Exchange
Primary SMTP: SourceMail@DominioSource.com	Primary SMTP: SourceMail@DominioSource.com
	Secondary SMTP: SourceMail@DominioTarget.com

## Inbox Rules

NetIQ Exchange Migrator migrates the inbox rules associated with the mailboxes you migrate, with the following limitations:

- NetIQ Exchange Migrator migrates most out-of-office rules, but has a few restrictions. For more information about these limitations, see the Release Notes.
- Server-side rules that include the following restrictions:
  - “Flagged for action” restriction
  - “Sent through the specified account” restriction
  - RSS feed restrictions

All of these types of restrictions use stored information that NetIQ Exchange Migrator cannot access. When mailboxes include server-side rules with these types of restrictions, Exchange Migrator migrates the mailboxes, but Microsoft Outlook displays errors for those inbox rules.

Inbox rules migration occurs only when you perform data synchronization for migrated mailboxes. NetIQ Exchange Migrator requires an X500 address on the target to be able to resolve mail-enabled object references in rules. If a referenced object has not been migrated or the X500 address does not exist, the rule will not work properly until the required information is available.

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### Note

NetIQ Exchange Migrator may display minor errors when migrating certain inbox rules involving flags, message deletion, specified Exchange accounts, and client-only rules involving move or copy to mail folders. In some cases, users may have to recreate some of these rules if they are not properly migrated.

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## Passwords

You can specify how NetIQ Exchange Migrator creates passwords for user accounts on the target Microsoft Exchange server. If you merge source user accounts into target user accounts based on a common property or mapping file, NetIQ Exchange Migrator keeps existing target passwords. For more information about migrating using account mappings, see [“Setting Up Your Network Environment”](#) on page 33 and [“Mapping to Existing Objects on the Target Server”](#) on page 51.

You can also specify a pattern for NetIQ Exchange Migrator to generate complex passwords. Ensure passwords for migrated objects comply with the password complexity rules in the target domain.

## Mailbox Collision Handling

In cross-organization migrations, NetIQ Exchange Migrator checks to see if the source mailbox conflicts with a target mailbox before migration. If there is a conflict, NetIQ Exchange Migrator merges the source and target mailboxes.

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### Note

This section is applicable only to cross-organization migration scenarios. Since each SMTP address is unique within a forest, mailbox collisions do not occur in intra-organization migrations.

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The following table further illustrates how NetIQ Exchange Migrator handles conflicts with target objects.

Conflicting Target Object Type	Behavior
Mailbox	<ul style="list-style-type: none"> <li>• Merge. NetIQ Exchange Migrator: <ul style="list-style-type: none"> <li>• Overwrites the existing target mailbox properties with the source properties</li> <li>• Maintains the target sAMAccountName attribute and alias values during cross-organization migrations</li> <li>• Merges the target address to show the source mailbox name in the target address</li> <li>• Copies the source cc:Mail, MS mail, X400, and X500 addresses</li> </ul> </li> </ul>
Contact	<ul style="list-style-type: none"> <li>• Retains the SMTP address of the target contact</li> <li>• Retains the cc:Mail address for the contact, adds a new user cc:Mail address for the target, and copies the source cc:Mail address to the target</li> <li>• Retains mail for the contact, adds a new user MS mail address for the target, and copies the source mail address to the target</li> <li>• Converts the X400 target CR address to the X400 target user address, copies the source X400 address to the target</li> <li>• Copies the X500 directory source address (path of object) to the target</li> </ul>

If there is no conflict with a target mailbox, NetIQ Exchange Migrator creates a new mailbox on the target server and migrates the source mailbox properties and data to the newly-created target mailbox.

## Understanding Mailbox Migration

To perform a mailbox migration, NetIQ Exchange Migrator creates a new mailbox on the target server and copies source mailbox properties and data to the new target mailbox, retaining the properties of the migrated data. For example, NetIQ Exchange Migrator does not change creation dates for mail items. NetIQ Exchange Migrator also respects policies limiting the target mailbox size. Ensure that any Microsoft Windows or Microsoft Exchange server policy on the target server allows the migration of source data.

To perform a migration between different Microsoft Exchange organizations, NetIQ Exchange Migrator creates a source contact that forwards new messages intended for the source mailbox to the migrated mailbox. NetIQ Exchange Migrator copies email addresses from the source mailbox to the source contact. Since the source contact contains the source mailbox addresses, the source contact receives the mail intended for the source mailbox. The source contact then forwards the mail to the migrated target mailbox. NetIQ Exchange Migrator prefixes the source mailbox email address with the word “--Migrated--” to resolve email conflicts between the source mailbox and the source contact. NetIQ Exchange Migrator removes the prefix if you undo the migration.

To help avoid confusion, NetIQ Exchange Migrator gives you the option to hide the source mailbox from the source GAL after migration, leaving only the source contact visible in the GAL.

For migrations between different organizations, NetIQ Exchange Migrator uses secondary mail protocols to route mail to the source mailbox when handling replies to messages received prior to a mailbox migration. For example, when a user replies to a message sent from a migrated mailbox, Microsoft Exchange routes mail to the source mailbox. NetIQ Exchange Migrator modifies the `AltRecipient` property of the source mailbox to forward mail to the source contact, which then forwards the email to the target mailbox.

If you do not translate the source email addresses for migrated accounts, NetIQ Exchange Migrator adds a randomly-generated email address to the migrated mailbox to ensure the migrated mailbox has a unique email address. Using these randomly-generated email addresses, NetIQ Exchange Migrator correctly forwards mail from the source contact to the migrated mailbox. If you do not want to use randomly-generated email addresses, you can choose to translate source email addresses in the Email Address Options window of the Specify Migration Options wizard.

## Handling Existing Target Accounts

NetIQ Exchange Migrator allows you to merge source user mailboxes into existing target user accounts. You can perform this merge by importing mappings to the target accounts from Domain Migration Administrator or by matching specified source and target account properties. For more information about importing mappings from Domain Migration Administrator, see [“Mapping to Existing Objects on the Target Server”](#) on page 51.

For trusted cross-organization migration scenarios, you can choose to merge mailboxes for source and target user accounts that do not have imported mappings as long as the accounts share a common sAMAccountName attribute, SIDHistory attribute, or SMTP address. Select the appropriate migration option in the Specify Migration Options wizard. For more information about merging accounts based on a shared property, see [“Creating Mappings Based on a Common Property”](#) on page 51.

For untrusted cross-organization migration scenarios, you can merge mailboxes by sAMAccountName or SMTP address. However, merging mailboxes by SIDHistory does not work, since domain migration tools such as ADMT or DMA require trust relationships for user and group migrations with SIDHistory.

For intra-organization migrations, if no DMA mapping exists for a migrated mailbox, you can specify whether NetIQ Exchange Migrator creates a new Windows account for the migrated mailbox, associates the source account with the target migrated mailbox, or merges the source and target accounts by sAMAccountName.

- *If you select the option to create a new account*, Exchange Migrator creates a user account on the target and then moves both the account and the mailbox. If a target account with the same sAMAccountName already exists, NetIQ Exchange Migrator adds a numeric suffix to the sAMAccountName of the source account before moving it to the target.
- *If you select the option to associate the source account with the new target mailbox*, Exchange Migrator uses the existing AD account and just moves the mailbox.
- *If you select the option to merge by sAMAccountName*, Exchange Migrator moves the mailbox to the target and merges the source account properties with the target account. There is no merge by SIDHistory option for intra-organization migrations.

## Contacts

Contacts are email recipients whose primary mail storage exists outside the Microsoft Exchange organization. NetIQ Exchange Migrator can migrate contacts from the source to the target server. NetIQ Exchange Migrator compares all email address protocols associated with a contact in handling collisions. You can use the migration status conflict reports to determine if any target objects have the same email address as a source contact. For more information about conflict reports, see [“Conflict Reports”](#) on page 67.

When you migrate a contact, NetIQ Exchange Migrator checks to see if the source contact conflicts with a target object.

- If no collision is detected, NetIQ Exchange Migrator creates a new contact using the default recipient policy.
- If there is a conflict in a cross-organization migration, NetIQ Exchange Migrator always creates a new contact on the target. NetIQ Exchange Migrator does not currently support contact merging for cross-organization migration scenarios.
- If there is a conflict in an intra-organization migration, NetIQ Exchange Migrator merges the contacts based on the Common Name (CN) property instead of the sAMAccountName or SIDHistory property, since those properties are not available for contact objects. During this process, NetIQ Exchange Migrator mail-enables the target contact and mail-disables the source contact.

## Distribution Lists

NetIQ Exchange Migrator migrates distribution lists from a source Microsoft Exchange server to a target Microsoft Exchange server. NetIQ Exchange Migrator creates a new distribution list if there is no target distribution list with the same email address. NetIQ Exchange Migrator compares all email address protocols associated with a distribution list to determine collision handling.

NetIQ Exchange Migrator checks if the source distribution list conflicts with a target distribution list, a universal group, or a global security group. If there is a conflict, NetIQ Exchange Migrator merges the distribution lists. During this process, NetIQ Exchange Migrator mail-enables the target distribution list and mail-disables the source distribution list.

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### Note

Making changes to the display name of a migrated distribution list does not affect the ability to use the NetIQ Exchange Migrator synchronization options. Synchronization is based on the distinguished name of an object, not the display name property.

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## Public Folders

When migrating public folders, NetIQ Exchange Migrator copies public folders, along with their permissions, from the source to the target. You can specify the public folders you want to migrate. Once you migrate public folders, you cannot use NetIQ Exchange Migrator to undo the migration.

When you migrate public folders between organizations or within the same organization, NetIQ Exchange Migrator copies source information and permissions to the target Microsoft Exchange server. If you make changes to the public folders on the source Microsoft Exchange server after the initial migration, you can synchronize migrated public folders bi-directionally. For more information, see [“Synchronizing Public Folders”](#) on page 59.

## Public Folder Properties

NetIQ Exchange Migrator does not migrate some public folder properties to the target Microsoft Exchange server, such as:

- Custom attributes
- Replication schedule
- Trust level
- Notes field
- Limits tab properties

## Public Folder Collision Handling

NetIQ Exchange Migrator always applies merge collision handling to public folders. If a source public folder has the same path as a target public folder, NetIQ Exchange Migrator merges the contents of the folders. If there is no target public folder with the same path, NetIQ Exchange Migrator creates a new public folder and preserves the folder hierarchy. For example, if you have a public folder nested at the third level, and you migrate only the third level public folder, NetIQ Exchange Migrator creates the folder hierarchy at levels 1, 2, and 3 folders, but copies the data only for the third-level folder.

## Translating Public Folder Security

To update permissions to public folders for migrated accounts during a synchronization, Microsoft Exchange must have account mappings for the migrated accounts to the public folders. NetIQ Exchange Migrator is able to determine these account mappings once you migrate a mailbox from the source containing the public folders you are synchronizing to the target organization. If the organization containing the public folders you want to synchronize does not have a migrated mailbox, migrate a mailbox before you attempt to synchronize public folders. If the source does not have a mailbox to migrate, create an empty mailbox and migrate it to the target. For more information, see [“Synchronizing and Updating Migrated Mailboxes”](#) on page 58.

## Understanding Object Synchronization

When you migrate an object, NetIQ Exchange Migrator migrates the object, the object’s properties, and optionally any data contained in the object. NetIQ Exchange Migrator also stores any information about other objects to which the migrated object has Delegate permissions, but that have not yet been migrated in the NetIQ Exchange Migrator database. In cross-organization mailbox migrations you can choose whether to migrate mailbox data and permissions immediately or migrate permissions separately after migrating mailbox data.

After migrating an object, you can run the Synchronize and Update Migrated Mailboxes wizard or the Synchronize and Update Migrated Public Folders wizard to update mailboxes or public folders with changes to the source mailboxes or public folders.

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**Note**

In cross-organization mailbox migrations you can choose whether to migrate mailbox data and permissions immediately or migrate permissions separately after migrating mailbox data. However, in intra-organization migrations NetIQ Exchange Migrator migrates all data and permissions immediately, so you do not have to perform these additional post-migration tasks. The Synchronize and Update Migrated Mailboxes, Update Mail Flow, and Update Target Mailbox Permissions post-migration tasks on the task pad in the console are not applicable to intra-organization migrations.

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Changes to source mailboxes that NetIQ Exchange Migrator synchronizes include new messages as well as new or updated calendar appointments, folders, notes, and personal contacts. Mailbox synchronization also deletes emails, calendar appointments, folders, notes, and personal contacts from the target mailbox that have been deleted on the source mailbox.

NetIQ Exchange Migrator synchronizes public folders bi-directionally, synchronizing additions between both the source public folders and the target public folders. Public folder synchronization does not synchronize deletions between the source and target. To delete objects from public folders, you must delete the objects from both the source and target Microsoft Exchange servers. Otherwise Exchange Migrator will create the object on the Microsoft Exchange server where you deleted the object during the next public folder synchronization.

Object synchronization also updates permissions on migrated mailboxes and public folders. For example, if you migrated mailbox A in one migration, and migrated mailbox B in a later migration, the mailbox synchronization wizard updates mailbox A with any Delegate permissions it has for mailbox B. Updating the Delegate permissions on previously migrated objects ensures that Delegate permissions between migrated objects remain current regardless of when the objects were migrated.

You may want to synchronize objects after every migration so newly migrated objects have access to previously migrated objects. For more information, see [“Synchronizing and Updating Migrated Mailboxes”](#) on page 58 and [“Synchronizing Public Folders”](#) on page 59.

NetIQ Exchange Migrator stores information about Delegate permissions that migrated objects have to unmigrated objects in the NetIQ Exchange Migrator database. NetIQ Exchange Migrator uses the information in the database to update mailbox permissions after you decommission the source Microsoft Exchange server. To update mailbox permissions after decommissioning the source server, run the Update Target Mailbox Permissions wizard.

## Understanding Directory Synchronization

Directory synchronization allows you to synchronize the GALs and distribution list memberships for objects in your source and target Microsoft Exchange organizations before and during a migration. How NetIQ Exchange Migrator performs a directory synchronization depends on whether NetIQ Exchange Migrator is creating new target contacts or mail-enabling existing target accounts.

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**Note**

Directory synchronization is not applicable to intra-organization migration scenarios.

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NetIQ Exchange Migrator synchronizes directories using the merge method you choose in the Directory Synchronization wizard. You can synchronize directories using any of the three methods:

- Synchronize using sAMAccountName attribute
- Synchronize using SIDHistory attribute
- Create new contacts on the target server

By default, NetIQ Exchange Migrator synchronizes directories based on the sAMAccountName attribute. NetIQ Exchange Migrator mail-enables the target account that shares the same SAM account name as the primary Microsoft Windows account for the source mailbox and then sets the source mailbox Reply-To address to the target mailbox. You can also synchronize directories using the SIDHistory attribute or choose not to merge and create new contacts on the target Microsoft Exchange server.

If you create new contacts during directory synchronization, NetIQ Exchange Migrator creates all the mailbox properties for that contact. If you mail-enable existing user accounts on the target Microsoft Exchange server, NetIQ Exchange Migrator migrates only the email addresses for the user accounts' mailboxes. If you have synchronized a user account or contact previously, NetIQ Exchange Migrator ignores the account or contact. For more information about directory synchronization, see [“Synchronizing the Directory”](#) on page 60.

## Special Characters

In this document, special characters are keyboard characters other than the standard set of alphanumeric characters. Alphanumeric characters are letters A to Z or a to z and numbers 0 to 9.

NetIQ Exchange Migrator supports the same alphanumeric and special characters that Microsoft Exchange and Microsoft Windows Server support. NetIQ Exchange Migrator maintains international characters, such as Ä, ä, Å, and å in migrated mailbox aliases, but does not maintain these characters in migrated email addresses. You can migrate objects that contain special characters, to other sites and organizations using NetIQ Exchange Migrator projects. For more information about supported characters, see the appropriate Microsoft documentation.

To specify the target container for a migration when the organization name where the container is located contains a special character, you must use a backslash (\) in front of the special character. For example, to migrate objects to a target container named *TargetOU, Sales* in a domain named *Domain.com* in the target organization, enter the distinguished name in the **Target OU** field of the Select Target OU window in the Specify Migration Options wizard with a backslash (\) prefixing the special character (comma):

```
OU=TargetOU\, Sales, DC=Domain, DC=com
```

When specifying a target storage group for a migration, ensure the storage group name does not contain a period (.). NetIQ Exchange Migrator considers the period to be a special character and does not support storage groups with a period in the name. To correct this issue, rename the target storage group to exclude the period.

# Understanding Migration Issues

There are a number of potential issues associated with migrating to another Microsoft Exchange organization. The following sections describe some of those issues and how NetIQ Exchange Migrator handles them.

## Antivirus Software

If you are running antivirus software that is based on the antivirus application programming interface (API) on the source or target Microsoft Exchange servers and want to use NetIQ Exchange Migrator, stop the antivirus software before migrating objects. Running antivirus software during migration may prevent migration of some information associated with a mailbox. For more information about this problem, see the article “MAPI Based Tasks Do Not Work with Virus API AntiVirus Software Running on the Exchange Server Computer” on the Microsoft support web site.

## Reply-To Addresses

The Reply-To address on an email message is a read-only field. NetIQ Exchange Migrator does not translate Reply-To addresses to indicate the new email address of migrated objects. To correct this problem, NetIQ Exchange Migrator migrates each mailbox, contact, and distribution list to the target Microsoft Exchange server with its source X500 address.

In a migration between Microsoft Exchange organizations, replies to migrated messages sent using **Reply to** or **Reply to All** are routed to the correct objects using the X500 object address. You must migrate or copy object properties for X500 routing to work. For example, User A sends User B an email. You migrate the mailboxes and messages for both users to the target Microsoft Exchange server. User B logs onto his mailbox on the target Microsoft Exchange server and replies to the message sent by User A using **Reply to**. The message is routed to User A on the target using the source X500 address.

In a migration between sites within a Microsoft Exchange organization, NetIQ Exchange Migrator sends messages using **Reply to** or **Reply to All** to the source objects and then forwards to the correct objects on the target Microsoft Exchange server. When you remove the source object, messages are sent directly to the correct objects on the target Microsoft Exchange server.

## Performance Considerations

Consider the following tips for improving migration performance:

- Run NetIQ Exchange Migrator in the target domain
- *If you are performing a cross-organization migration*, install NetIQ Exchange Migrator on a multiprocessor or multi-core computer
- Use the EMCLI to schedule your migration for off-peak hours
- Migrate objects in batches, using more than one project, if you are migrating a large number of objects
- Instruct users to delete unneeded data before the migration

NetIQ Exchange Migrator provides better performance if your Microsoft Exchange source and target servers are not running at full capacity when you migrate. Migrations also run with better performance if mailboxes are not open during the migration. If a mailbox is open during the migration, current activity in the mailbox may not be migrated successfully. For best results, run the migration during periods of low mailbox activity. You may observe fastest results when running NetIQ Exchange Migrator on the target server.

NetIQ Exchange Migrator supports multi-threading for all cross-organization trusted and untrusted migration scenarios. The default configuration is two threads per processor or processor core on the console computer when doing data migration. NetIQ Exchange Migrator takes advantage of the number of processors or processor cores on the console computer, so you can maximize migration performance by installing the Exchange Migrator console on a multiprocessor or multi-core computer.

Other factors can also influence migration performance. Very large projects can place a large memory and CPU load on the NetIQ Exchange Migrator computer and the user interface can become sluggish. Large amounts of data in mailboxes and public folders can slow performance. Too many items in a project can also affect performance, so NetIQ Exchange Migrator limits the number of mail objects and public folders you can add to a project at one time. You can adjust these default maximums if necessary to meet the needs of your environment. For more information, see [“Overriding the Default Number of Mail Objects or Public Folders You Can Add to a Project at a Time”](#) on page 37.

You may have less data to migrate if you instruct users to delete the contents of the deleted items and sent items folders before the migration. You can also use the NetIQ Exchange Migrator command-line interface with the Microsoft Windows schedule service to run migrations during periods of low activity. For more information, see [“NetIQ Exchange Migrator Commands and Utilities”](#) on page 73.



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## Chapter 4

# Pre-Migration Planning and Assessment

Pre-migration planning and environment assessment are critical to the success of any migration project. The following sections provide guidance to help you prepare and execute your migration plan.

## Migration Best Practices

Insufficient planning, assessment, and testing are the most common causes of migration project failure. Review the following migration best practices to help you plan your migration:

- **Validate prerequisites.** More than 50% of all issues customers encounter are the result of missing prerequisites in the migration environment. Review the requirements for software, hardware, permissions, and system configuration, and then run the tests provided in the Pre-Migration Assessment Utility. Address any identified issues and re-run the tests to ensure they complete successfully *before* you begin your migration. For more information about this tool, see [“Using the Pre-Migration Assessment Utility”](#) on page 73.
- **Verify connectivity.** Verify connectivity and name resolution on all computers involved in the migration. Otherwise, you are likely to run into issues during your migration. Treat each new domain, console, or server as a new environment. The Pre-Migration Assessment Utility can help you identify environmental issues. For more information, see [“Using the Pre-Migration Assessment Utility”](#) on page 73.
- **Start small.** Document the process you will follow. Show success on a small test project by following the documented process before you attempt a large scale migration.
- **Test and retest.** Perform initial testing, do a pre-pilot project, do a pilot project, and *then* do a production migration. By the end of the pilot stage, you should have discovered and addressed all potential issues. Ensure you obtain the expected results in your test migration before rolling out the full-fledged production migration.
- **Think ahead.** Consider the impact the migration will have on products such as Microsoft SharePoint and any other third-party software. Ensure that users will be able to access resources after the migration.
- **Preserve licenses.** Before you begin your production migration, undo your test migrations to retain the full license count you purchased.

- **Verify mail flow.** Check mail flow before migrating. Ensure your source and target environments are running and email can be successfully sent and replied to between the source and target before performing the migration.
- **Migrate in order.** Follow the recommended migration order:
  - Synchronize directories between the source and target
  - Migrate contacts
  - Migrate distribution lists
  - Migrate public folders
  - Migrate mailboxes

For more information about the recommended order of all migration tasks, see [“Migration Checklist: Start to Finish”](#) on page 43.

## Developing a Migration Plan

To perform a successful migration, you should have a detailed plan that addresses the scope and timeframe for your migration. If your migration will take a long time to perform, you may need to operate your source and target organizations in parallel. If your migration is small enough to complete quickly, you may want to finish your migration before users can log on to the new organization. In all migrations, NetIQ Corporation strongly recommends you do extensive migration testing in a test environment before you migrate objects in your production environment.

### Operating Source and Target Organizations in Parallel

If you are planning to migrate objects over an extended period of time, you may want to operate your source and target Microsoft Exchange organizations at the same time. Operating parallel organizations is a useful option for large Microsoft Exchange migrations because it allows you to migrate users in manageable batches and to stabilize those users on the target organization as the migration progresses. Migrated users log on to the target Microsoft Exchange organization while unmigrated users log on to the source Microsoft Exchange organization. Users in both organizations are able to communicate with each other using email and public folders. You can maintain both Microsoft Exchange organizations until your migration is complete.

NetIQ Exchange Migrator provides utilities that help you operate your Microsoft Exchange organizations in parallel, such as directory synchronization, two-way public folder synchronization, and mailbox synchronization.

### Allowing Access to Target Organization Only When Migration Is Complete

If you are able to migrate your source organization quickly, you may want to complete your migration before allowing users to log on to the target Microsoft Exchange organization. This option allows you to run tests on the target Microsoft Exchange organization to minimize the impact of the migration on users.

# Assessing Your Microsoft Exchange Environment

Assess your source and target Microsoft Exchange organizations, sites, and servers before starting your migration. Run the tests in the Pre-Migration Assessment Utility and reports in NetIQ Exchange Migrator to help you assess your environment. For more information about the Pre-Migration Assessment Utility, see [“Using the Pre-Migration Assessment Utility”](#) on page 73.

Areas that are important for assessment include the following:

- Identify user accounts in your source organization that are associated with multiple mailboxes. Later versions of Microsoft Exchange require each user account to be associated with one mailbox.
- Identify mailboxes, distribution lists, contacts, public folders, and directory information that are no longer in use.
- Identify large mailboxes and public folders that may take a long time to migrate.
- Identify resources for key individuals in your organization so you can determine how and when to migrate associated objects, minimizing downtime for those individuals.
- Identify mailboxes that contain special properties and permissions that NetIQ Exchange Migrator does not migrate, such as restrictions on the Protocols tab. For more information, see [“Mailboxes”](#) on page 20.
- Identify which servers users are connecting to in the source organization. NetIQ Exchange Migrator migrates objects from one server to another server. Understanding which source servers users connect to can help you organize and schedule your migration.
- Identify the Microsoft Active Directory Users for the mailboxes you want to migrate.
- Identify special characteristics about your environment, including remote users and WAN links. Minimize migrations over WAN links to speed up your migration.

## Setting Up Your Network Environment

To ensure your migration goes smoothly with NetIQ Exchange Migrator, consider the following recommendations:

- Synchronize the time on all computers in the same time zone and ensure all computers participating in the migration are online and available before you begin migrating objects.
- Ensure no more than one user in a domain uses NetIQ Exchange Migrator at a time to migrate objects from and to the same source and target set. This will eliminate the following risks:
  - Naming collisions
  - Inadvertent attempts to migrate objects already migrated
  - Database table locks
  - Stress on both the source and target resources

- Alert your users to remove unused email items, such as sent items and deleted items, before you perform the migration. Removing unnecessary items can substantially reduce the amount of data you migrate and the time required to complete the migration.
- Use a domain migration tool, such as Domain Migration Administrator, to migrate Active Directory user accounts, groups, and user account passwords. If you use Domain Migration Administrator, you can import the Domain Migration Administrator account mapping data to NetIQ Exchange Migrator to ensure correct account matching as you migrate mailboxes, distribution lists, contacts, public folders, and directory information. If you use NetIQ Exchange Migrator to assign passwords to newly created user accounts instead of a domain migration tool, ensure the passwords meet the password requirements in that domain or temporarily reduce the password requirements before you migrate.

## Coordinating Domain and Microsoft Exchange Migrations

If you are performing a domain migration in addition to your Microsoft Exchange migration, you need to address several additional considerations in your migration plan. NetIQ Exchange Migrator is not a domain migration tool. NetIQ Exchange Migrator can create user accounts in the new domain for each mailbox you migrate. However, NetIQ Exchange Migrator does not migrate the Microsoft Windows permissions for the migrated user accounts or groups.

To maintain account access permissions, NetIQ Corporation recommends you use a domain migration tool, such as NetIQ Domain Migration Administrator, to migrate user accounts and groups before you begin your Microsoft Exchange migration. For more information, see the *User Guide for Domain Migration Administrator*.

NetIQ Exchange Migrator works with domain migration tools, such as Domain Migration Administrator, by allowing you to map your source Microsoft Exchange objects to your target Microsoft Exchange server. You can map objects in the following ways:

- Create mappings during your migration by associating source Microsoft Exchange objects with target accounts that share the same sAMAccountName or sIDHistory attribute. For more information, see [“Creating Mappings Based on a Common Property”](#) on page 51.
- Import the Domain Migration Administrator mappings table. This table provides account information to map Microsoft Exchange objects to target accounts migrated using Domain Migration Administrator. For more information, see [“Importing Object Mappings from Domain Migration Administrator”](#) on page 52.

When using Domain Migration Administrator and NetIQ Exchange Migrator together for a complete migration solution to the Active Directory, perform the following migration tasks in the specified order.

### To coordinate your domain and Microsoft Exchange migrations:

1. Use Domain Migration Administrator to complete your domain migration.
2. *If you did not yet translate security on your Microsoft Exchange objects*, import the mappings table file.
3. *If you translated security on your Microsoft Exchange objects*, use NetIQ Exchange Migrator to create mappings based on a common property.
4. Use NetIQ Exchange Migrator to complete your Microsoft Exchange migration.

# Preparing Microsoft Exchange for Migration

Verify that your Microsoft Exchange organizations are correctly configured before you start your migration. The following sections identify common configuration issues and solutions.

## Supported Microsoft Exchange Versions

Use a supported version of Microsoft Exchange in a supported scenario to guarantee a successful migration. Begin by installing the latest service packs for the version of Microsoft Exchange installed on the source and target servers. For more information about supported scenarios and Microsoft Exchange service pack requirements, see [“Supported Migration Scenarios”](#) on page 5.

Properly configure your Exchange servers and verify they are running before you use NetIQ Exchange Migrator to migrate mailboxes, distribution lists, contacts, public folders, and directory information.

## Supported Email Clients

Verify your network computers are using email clients and operating systems in supported configurations to ensure you have correctly updated migrated mailbox profiles at the end of migration. NetIQ Exchange Migrator supports mailbox profile updates for users running the following email clients:

- Microsoft Outlook 2010 (32- and 64-bit)
- Microsoft Outlook 2007
- Microsoft Outlook 2003

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### Note

NetIQ Exchange Migrator does not support Microsoft Outlook clients running on Mac computers.

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## Internet Mail Service and SMTP Connector

During your migration, you may want to operate your source and target Microsoft Exchange organizations at the same time. In this situation, migrated users log on to the target Microsoft Exchange organization while unmigrated users log on to the source Microsoft Exchange organization. To allow mail flow between the source and target Microsoft Exchange organizations during your migration, enable the following services:

- The Internet Mail Service on source and target Microsoft Exchange organizations
- The SMTP connector on target Microsoft Exchange organizations

## Preparing Your Microsoft Exchange Logs

Ensure the Exchange server computer has adequate space for the Microsoft Exchange information store transaction logs. Microsoft Exchange logs grow proportionally to the amount of data that is migrated. To reduce the amount of disk space needed for migration and log storage, you can recommend that users remove unused data, such as sent items and deleted items, prior to migration.

Microsoft Exchange duplicates migrated mailbox data in the Microsoft Exchange information store transaction logs. Microsoft Exchange truncates transaction log files until you back up all databases in the storage group. Backing up these databases can increase the disk space requirement unless you enable circular logging. By default, newer versions of Microsoft Exchange disable circular logging. You should enable circular logging before you start your Microsoft Exchange migration to reduce the amount of disk space that the Microsoft Exchange logs require.

To ensure system stability and recoverability, store the Microsoft Exchange transaction logs and the information store on different volumes. Use different volumes to establish an incremental backup scheme. Back up the Microsoft Exchange information store, and then back up the transaction logs. When you need to restore the data, play back the changes made since the last full backup. You can also set the backup program to delete or truncate the transaction log files nightly after the incremental backup completes successfully.

Sometimes the transaction log volume is much smaller than the space available for the information store. To ensure the successful storage of transaction logs, enable circular logging on the target storage group. If you cannot enable circular logging, verify there is at least 30 MB of disk space to accommodate the transaction logs.

To prepare your Microsoft Exchange logs, perform the following tasks:

- Enable circular logging
- Store transaction logs and the information store on different volumes
- Back up the information store and transaction logs

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## Chapter 5

# Customizing Migration Settings

The topics in this section provide information about customization tasks that may be necessary for your migration, depending on your environment and planned migration scenario.

NetIQ Exchange Migrator has a number of built-in default settings and cached information stored in the Windows Registry that you can modify or override to meet the needs of your environment. For example, you can make the following changes:

- Override the default maximum number of mail objects or public folders that can be added to a project at one time
- Override the default domain controller or global catalog lookup
- Enable the `PreserveMailboxSizeLimit` parameter
- Change the default value of the alternate credentials registry key for a trusted cross-organization migration

This section provides instructions for modifying the appropriate registry keys to make these changes.

## Overriding the Default Number of Mail Objects or Public Folders You Can Add to a Project at a Time

You can use NetIQ Exchange Migrator projects to create manageable groups of objects and use the migration wizards to migrate subsets of the objects in a project. By default, NetIQ Exchange Migrator allows you to add a maximum of 5000 mail objects at a time and a maximum of 500 public folders to a project at a time. If you try to add more than 5000 mail objects or 500 public folders at a time, NetIQ Exchange Migrator displays an error. If you need to migrate a large number of mail objects or public folders, create separate projects for groups of less than 5000 mail objects or 500 public folders.

The defaults set for mail objects and public folders are appropriate for most environments. However, if necessary, you can override these defaults by modifying the `MaxSelectedObjectsValue` registry key or the `MaxSelectedPFValue` registry key. These registry keys are created when you click the **Add** button in the Select Mail Objects wizard.

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### Warning

Be careful when editing your Windows Registry. If there is an error in your Registry, your computer may become nonfunctional. If an error occurs, you can restore the Registry to its state when you last successfully started your computer. For more information, see the Help for the Windows Registry Editor.

---

To override the default maximum number of mail objects or public folders you can add to a project at a time:

1. Start your registry editor and navigate to one of the following keys:
  - On a computer that is running a 32-bit operating system:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\NetIQ\ExchangeMigrator
  - On a computer that is running a 64-bit operating system:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\NetIQ\ExchangeMigrator
2. *If you want to change the default maximum number of mail objects that can be added to a project at a time*, change the value of the **MaxSelectedObjectsValue** key to a number that is appropriate for your environment.
3. *If you want to change the default maximum number of public folders that can be added to a project at a time*, change the value of the **MaxSelectedPFValue** key to a number that is appropriate for your environment.
4. Close the registry editor, and then restart NetIQ Exchange Migrator to apply your changes.

## Overriding a Domain Controller or Global Catalog Lookup

NetIQ Exchange Migrator uses the source and target domain controllers you specify for a migration project. However, if NetIQ Exchange Migrator cannot connect to a domain controller for any reason, NetIQ Exchange Migrator displays an error. If necessary, you can modify the Windows Registry to override a default domain controller selection and specify a different domain controller for NetIQ Exchange Migrator to use. You can also specify the Global Catalog server you want NetIQ Exchange Migrator to use. The domain controller override and the global catalog server are unrelated. They can be the same server or two different servers.

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### Warning

Be careful when editing your Windows Registry. If there is an error in your Registry, your computer may become nonfunctional. If an error occurs, you can restore the Registry to its state when you last successfully started your computer. For more information, see the Help for the Windows Registry Editor.

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### To override a domain controller or global catalog in the registry:

1. Start your registry editor and navigate to one of the following keys:
  - On a computer that is running a 32-bit operating system:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\NetIQ\ExchangeMigrator\DomainControllers
  - On a computer that is running a 64-bit operating system:  
HKEY\_LOCAL\_MACHINE\SOFTWARE\Wow6432Node\NetIQ\ExchangeMigrator\DomainControllers

Under the **DomainControllers** key is a list of subkeys. Each subkey is named after the source and target Exchange servers you specified in your migration project. Each domain controller subkey has the following values: **DC** (string) and **AutoCreated** (DWORD).

2. *If you want to override a domain controller*, complete the following steps:
  - a. In the left pane, select the subkey for the domain controller you want to override.
  - b. Replace the **DC** value with the name of the domain controller you want NetIQ Exchange Migrator to use. Use the fully qualified domain name, such as **DomainController1.Domain.com**.

- c. In the **Value data** field, replace the current value with the name of the domain controller you want NetIQ Exchange Migrator to use. Use the fully qualified domain name, such as `DomainController1.Domain.com`.
  - d. Change the **AutoCreated** value from 1 to 0.
3. *If you want to override the Global Catalog lookup*, complete the following steps:
- a. In the left pane, select the appropriate domain controller subkey.
  - b. Create a new **String Value** named GC.
  - c. For the new **GC** item, set the **Value data** field to the name of the Global Catalog server you want NetIQ Exchange Migrator to use. Use the fully qualified domain name, such as `GCServer1.Domain.com`.
4. Close the registry editor, and then restart NetIQ Exchange Migrator to apply your changes.

## Enabling the PreserveMailboxSizeLimit Parameter

When you migrate mailboxes from Microsoft Exchange Server 2003 to Microsoft Exchange Server 2007, NetIQ Exchange Migrator allows you to enable the `PreserveMailboxSizeLimit` parameter in the `Move-Mailbox PowerShell` cmdlet. The `PreserveMailboxSizeLimit` parameter specifies whether to apply the size limit options of the source mailbox to the target mailbox.

---

### Warning

Be careful when editing your Windows Registry. If there is an error in your Registry, your computer may become nonfunctional. If an error occurs, you can restore the Registry to its state when you last successfully started your computer. For more information, see the Help for the Windows Registry Editor.

---

### To enable the `PreserveMailboxSizeLimit` parameter:

1. Start your registry editor and navigate to one of the following keys:
  - On a computer that is running a 32-bit operating system:  
`HKEY_LOCAL_MACHINE\SOFTWARE\NetIQ\ExchangeMigrator`
  - On a computer that is running a 64-bit operating system:  
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\NetIQ\ExchangeMigrator`
2. Create a new **DWORD Value** named `PreserveMailboxSizeLimit`.
3. Open the `PreserveMailboxSizeLimit` parameter and change the value in the **Value data** field to 1.
4. Close the registry editor, and then restart NetIQ Exchange Migrator to apply your changes.

# Setting the Alternate Credentials Registry Key

When you install NetIQ Exchange Migrator, the setup program creates the `EnableAltCredentials` registry key. The required value of this registry key is different depending on your migration scenario:

- For untrusted cross-organization migrations, you do not need to change the value of this registry key. The value is set to 1 by default, so the request for alternate credentials for untrusted migration scenarios is automatically enabled in the New Project Wizard.
- For intra-organization migrations, NetIQ Exchange Migrator ignores this registry key, so you do not need to change the value.
- However, for *trusted cross-organization migration scenarios*, you must disable the registry key by changing the value to 0.

---

## Warning

Be careful when editing your Windows Registry. If there is an error in your Registry, your computer may become nonfunctional. If an error occurs, you can restore the Registry to its state when you last successfully started your computer. For more information, see the Help for the Windows Registry Editor.

---

### To change the `EnableAltCredentials` registry key for a trusted cross-organization migration:

1. Start your registry editor and navigate to one of the following keys:
  - On a computer that is running a 32-bit operating system:  
`HKEY_LOCAL_MACHINE\SOFTWARE\NetIQ\ExchangeMigrator`
  - On a computer that is running a 64-bit operating system:  
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\NetIQ\ExchangeMigrator`
2. Open the `EnableAltCredentials` key and change the value in the **Value data** field from 1 to 0.
3. Close the registry editor, and then restart NetIQ Exchange Migrator to apply your changes.

# Enabling Cmdlets Logging

You can enable logging of PowerShell cmdlets by adding the `EnableCmdletsLog` key in the Windows Registry. The cmdlets log provides more detailed error logging that may assist you in troubleshooting migration errors.

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## Warning

Be careful when editing your Windows Registry. If there is an error in your Registry, your computer may become nonfunctional. If an error occurs, you can restore the Registry to its state when you last successfully started your computer. For more information, see the Help for the Windows Registry Editor.

---

### To enable the cmdlets log:

1. Start your registry editor and navigate to one of the following keys:
  - On a computer that is running a 32-bit operating system:  
`HKEY_LOCAL_MACHINE\SOFTWARE\NetIQ\ExchangeMigrator`
  - On a computer that is running a 64-bit operating system:  
`HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\NetIQ\ExchangeMigrator`
2. Create a new **DWORD Value** named `EnableCmdletsLog`.

3. Open the **EnableCmdletsLog** entry and set the value in the **Value data** field to 1.
4. Close the registry editor, and then restart NetIQ Exchange Migrator to apply your changes.



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## Chapter 6

# Migrating Exchange Objects

The following sections provide detailed instructions for performing all migration tasks. Use the information in the migration checklist to guide you through your migration.

## Migration Checklist: Start to Finish

Use the following checklist as a guide to your migration. The checklist includes steps for different migration scenarios that may or may not be appropriate for your migration. Perform only the steps that are appropriate for your migration.

<input checked="" type="checkbox"/>	Steps	Topic References
<input type="checkbox"/>	1. Ensure your environment meets all prerequisites, you have prepared a detailed migration plan, and you have performed extensive testing in a non-production environment.	<ul style="list-style-type: none"><li>• <a href="#">“NetIQ Exchange Migrator Requirements”</a> on page 8</li><li>• <a href="#">“Migration Best Practices”</a> on page 31</li><li>• <a href="#">“Developing a Migration Plan”</a> on page 32</li></ul>
<input type="checkbox"/>	2. Back up the servers in your source Microsoft Exchange organization that contain objects you are migrating.	<ul style="list-style-type: none"><li>• See the Microsoft Exchange Server documentation</li></ul>
<input type="checkbox"/>	3. In the NetIQ Exchange Migrator console, create one or more projects for your migration.	<ul style="list-style-type: none"><li>• <a href="#">“Creating a Project”</a> on page 48</li><li>• <a href="#">“Setting Up Multiple Projects”</a> on page 47</li></ul>
<input type="checkbox"/>	4. Specify migration options and scripts for each project.	<ul style="list-style-type: none"><li>• <a href="#">“Migration Tasks”</a> on page 56</li><li>• <a href="#">“Customizing Migration with Scripting”</a> on page 69</li></ul>
<input type="checkbox"/>	5. Select objects for your migration projects.	<ul style="list-style-type: none"><li>• <a href="#">“Selecting Objects to Migrate”</a> on page 53</li></ul>
<input type="checkbox"/>	6. Run reports to determine if you need to modify your existing organization.	<ul style="list-style-type: none"><li>• <a href="#">“Reporting”</a> on page 65</li></ul>
<input type="checkbox"/>	7. If applicable, import mappings from Domain Migration Administrator.	<ul style="list-style-type: none"><li>• <a href="#">“Importing Object Mappings from Domain Migration Administrator”</a> on page 52</li></ul>

<input checked="" type="checkbox"/>	Steps	Topic References
<input type="checkbox"/>	8. <b>If you are performing a cross-organization migration</b> , synchronize directories between the source and target. This step replicates the GAL in the target organization so it is available for migrated users.	<ul style="list-style-type: none"> <li>• <a href="#">“Synchronizing the Directory”</a> on page 60</li> </ul>
<input type="checkbox"/>	9. Turn off antivirus software on the source and target Microsoft Exchange servers.	<ul style="list-style-type: none"> <li>• <a href="#">“Antivirus Software”</a> on page 28</li> </ul>
<input type="checkbox"/>	10. Migrate contacts. This step adds contacts to the GAL so they are available for migrated users.	<ul style="list-style-type: none"> <li>• <a href="#">“Contacts”</a> on page 23</li> </ul>
<input type="checkbox"/>	11. Migrate distribution lists. This step ensures distribution list membership is current when you migrate mailboxes to the target organization.	<ul style="list-style-type: none"> <li>• <a href="#">“Distribution Lists”</a> on page 24</li> </ul>
<input type="checkbox"/>	12. Migrate public folders. This step ensures public folders are available to migrated users.	<ul style="list-style-type: none"> <li>• <a href="#">“Public Folders”</a> on page 24</li> <li>• <a href="#">“Migrating Objects Using the Migration Wizards”</a> on page 56</li> </ul>
<input type="checkbox"/>	13. Migrate mailboxes.	<ul style="list-style-type: none"> <li>• <a href="#">“Mailboxes”</a> on page 20</li> <li>• <a href="#">“Migrating Objects Using the Migration Wizards”</a> on page 56</li> </ul>
<input type="checkbox"/>	14. <b>If you are performing a cross-organization migration</b> , set up mailbox synchronization. Remember to synchronize mailboxes after you migrate all mailboxes to the target Microsoft Exchange server.	<ul style="list-style-type: none"> <li>• <a href="#">“Synchronizing and Updating Migrated Mailboxes”</a> on page 58</li> </ul>
<input type="checkbox"/>	15. Set up public folder synchronization. Remember to synchronize public folders after you migrate all mailboxes to the target Microsoft Exchange server.	<ul style="list-style-type: none"> <li>• <a href="#">“Synchronizing Public Folders”</a> on page 59</li> </ul>
<input type="checkbox"/>	16. <b>If you are performing a cross-organization migration</b> , synchronize the directory between source and target. Synchronizing the directory after migrating all the mailboxes ensures the target GAL is current and includes any changes made in the source GAL.	<ul style="list-style-type: none"> <li>• <a href="#">“Synchronizing the Directory”</a> on page 60</li> </ul>
<input type="checkbox"/>	17. <b>If you are performing a cross-organization migration</b> , update mail flow to deliver mail only to the target server.	<ul style="list-style-type: none"> <li>• <a href="#">“Updating Mail Flow”</a> on page 62</li> </ul>
<input type="checkbox"/>	18. <b>If you are performing a cross-organization migration</b> , run the NetIQ Coexistence Utility tool either after Step 16 or Step 17.	<ul style="list-style-type: none"> <li>• See the <i>NetIQ Coexistence Utility Release Notes</i></li> </ul>

<input checked="" type="checkbox"/>	Steps	Topic References
<input type="checkbox"/>	19. <i>If you are performing a cross-organization migration</i> , you may need to update mailbox permissions on the target server.	<ul style="list-style-type: none"> <li>• <a href="#">“Updating Mailbox Permissions on the Target”</a> on page 63</li> </ul>
<input type="checkbox"/>	20. Update client profiles.	<ul style="list-style-type: none"> <li>• <a href="#">“Updating Migrated Client Profiles”</a> on page 62</li> </ul>
<input type="checkbox"/>	21. Perform post-migration reporting and assessment of your environment to ensure the migration was successful.	<ul style="list-style-type: none"> <li>• <a href="#">“Reporting”</a> on page 65</li> </ul>

## Starting NetIQ Exchange Migrator

To start NetIQ Exchange Migrator, click **Exchange Migrator** in the NetIQ Migration program folder. Run only one instance of Exchange Migrator at a time on the console computer. Also, ensure there is no more than one user using Exchange Migrator to migrate between the same source and target server.

NetIQ Exchange Migrator uses the credentials of the logged-on user account to access the source and target directories. Ensure the account you use to run Exchange Migrator has the appropriate permissions. For more information, see [“NetIQ Exchange Migrator Permission Requirements”](#) on page 11.

## Using the NetIQ Exchange Migrator Console

The NetIQ Exchange Migrator user interface is a snap-in for the Microsoft Management Console (MMC). The Exchange Migrator console provides many standard MMC features and easy-to-use task pads for Exchange Migrator tasks.

When you open the console for the first time, the task pad displays only the Create a Migration Project icon.

Once you have created one or more projects, NetIQ Exchange Migrator displays nodes for mailboxes, distribution lists, contacts, and public folders for each project in the left pane of the console. When you select one of these nodes, NetIQ Exchange Migrator displays the objects of that type that are included in the project in the right pane.

These dynamic lists show useful information about the objects in the project, such as alias and migration status. The lists also provide a quick way to view the various object types included in a project and an easy way to select and delete objects from a project.

### Task Pad Items

NetIQ Exchange Migrator displays a task pad in the right pane when you select the root Exchange Migrator node or any project node in the left pane. Using the task pad, you can select from and review information about the available tasks.

To view NetIQ Exchange Migrator reports, click a report under the project. NetIQ Exchange Migrator displays the selected report in the right pane.

The NetIQ Exchange Migrator wizard runs each task pad item as a wizard to help you complete migration tasks. Depending on what you have selected in the left pane, the console task pad displays some or all of the following tasks:

#### **Create a Migration Project**

Allows you to specify a project name, a source Microsoft Exchange server, and a target Microsoft Exchange server for a migration project. You can create multiple projects to organize the migration according to your needs.

#### **Specify Migration Options**

Allows you to specify the migration options that define how NetIQ Exchange Migrator migrates mailboxes, distribution lists, contacts, and public folders for a project.

#### **Select Mail Objects**

Allows you to select mailboxes, distribution lists, and contacts to include in a project. You can select objects by browsing the global address list (GAL) or by importing from a .csv file.

#### **Select Public Folders**

Allows you to select public folders to include in a project.

#### **Gather Reporting Information**

Allows you to collect information to generate reports. Run this wizard any time you change the objects or settings in a project and want updated reports.

#### **Synchronize Directory between Source and Target**

Allows you to synchronize directory information, such as GALs and distribution list memberships, between source and target servers. This task is not applicable to intra-organization migrations.

#### **Migrate Mail Objects**

Allows you to migrate mailboxes, distribution lists, and contacts included in a project using the specified migration options.

#### **Migrate Public Folders**

Allows you to migrate public folders included in a project using the specified migration options.

#### **Synchronize and Update Migrated Mailboxes**

Allows you to update migrated mailbox permissions. Copies information added to mailboxes on the source since the last migration, such as new messages, calendar appointments, folders, and personal contacts. Also updates mailbox permissions as changes occur throughout a migration. This task is not applicable to intra-organization migrations.

#### **Update Mail Flow**

Allows you to update the source mailboxes to deliver incoming mail to the target mailbox. This task is not applicable to intra-organization migrations.

#### **Synchronize and Update Migrated Public Folders**

Allows you to update migrated public folder permissions, such as who may post and delete information. You can update public folder permissions when changes occur after the initial migration.

## Undo Mail Object Migration

Allows you to unhide the source mailbox, remove the alternate recipient setting, restore source settings, and delete the contact that NetIQ Exchange Migrator creates.

## Update Target Mailbox Permissions

Allows you to update the client-side folder permissions of the migrated mailboxes, such as send or receive permissions, after migration. This task is not applicable to intra-organization migrations.

## Saving Console Settings

When you close the console window, NetIQ Exchange Migrator allows you to save your console configuration settings. Saving your console configuration settings allows you to see the same console window every time you start NetIQ Exchange Migrator from the Start menu. This feature is useful if you have many NetIQ Exchange Migrator projects and you do not want to expand them every time you open the Exchange Migrator console.

You can save interface settings to a new . msc file or to the default . msc file. Saving a new . msc file enables you to provide the saved console file to another user for use on a different computer. Saving a new . msc file is also useful when you are running multiple applications that use the MMC interface and you want to snap in your saved consoles to one window so you can easily switch between open applications.

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### Note

If you installed more than one NetIQ Exchange Migrator console in your environment, changes you make in one console are not reflected in other consoles running at the same time. You must restart a console for it to display changes made in another console.

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## Understanding Projects

NetIQ Exchange Migrator helps you organize your migration using projects. You can choose to migrate all objects on a server in one project. You can also use multiple projects to migrate your objects depending on your specific requirements. Organize projects in a way that is appropriate to your migration. For example, you can organize projects by business unit or by objects that have similar attributes. If you use projects to group objects with similar attributes, you can specify appropriate migration options for the selected objects. When you migrate, only objects from the source server are affected by the migration. Ensure you understand how projects work before you start your migration.

## Setting Up Multiple Projects

You may choose to create multiple migration projects for technical reasons. For example, you can use NetIQ Exchange Migrator email address translation options if you need to modify email addresses as you migrate mailboxes to a new target server. If you use these options, the source mailboxes, distribution lists, and contacts in a project should have similarly-structured email addresses. If your mail objects have different naming conventions, you can place only objects with similar characteristics in each project. You can apply the same email address translation options to all objects in a project to produce optimal results.

Ask the following questions to determine if you need to create additional migration projects for technical reasons:

- Do you want to place all objects in the project in the same organizational unit (OU) or container on the target?
- Do you want to place all the objects in the project in the same storage group and database on the target?
- Do you want to create new user accounts in the same domain for all migrated mailboxes?
- Can you uniformly handle object references for all objects in the project? Object references include any references to mailboxes, contacts, distribution lists, public folders, and directory information in the Microsoft Exchange organization.
- If you are creating new user accounts, can you use the same method to set the password for all the new accounts?
- Will your scripts produce the same result for all objects in the project?
- Do the email addressing options apply equally well to all objects in the project?

If you answered “No” to any of the previous questions for any objects, you may want to create additional projects for the objects that do not conform.

You might choose to create multiple projects to help organize your migration. For example, you can organize a migration by business unit. Organizing your migration by business unit allows you to migrate all mailboxes in one business unit (for example, the Sales department) at one time and all mailboxes in another business unit (for example, Support) at another time. NetIQ Exchange Migrator correctly translates security for migrated objects, even when you migrate the objects from different projects.

If any project is too large to migrate at one time because of a slow bandwidth connection or limited migration time available, you can use the NetIQ Exchange Migrator command-line interface to migrate objects within a project in smaller batches. For more information, see [“Migrating and Synchronizing Objects Using the Command-Line Interface”](#) on page 57.

NetIQ Exchange Migrator provides many migration options to help you achieve the migration results you want. The options you use apply to all the objects in one project. You should become familiar with the migration options in a test environment before you organize your migration.

## Creating a Project

NetIQ Exchange Migrator uses projects to help you organize your Microsoft Exchange migrations. The New Project Wizard allows you to specify basic information for a migration project.

NetIQ Exchange Migrator verifies the information you provide when you run the New Project Wizard, such as access from the console to the source and target servers. NetIQ Exchange Migrator creates a database table to store project settings when the wizard is complete.

### To create a project:

1. In the left pane of the console, expand **Exchange Migrator**.
2. In the right pane, click **Create a Migration Project**.
3. Provide a project name.

Project names can contain up to 60 characters and can contain letters, numbers, dashes, and spaces. NetIQ Exchange Migrator uses the project name to create a project folder when you gather reporting information. The default installation folder is `Program Files\NetIQ\Exchange Migrator`. NetIQ Exchange Migrator creates the folder when you gather information for the migration status reports and stores the reports in HTML format in the project folder.

4. Follow the instructions to enter source, target, and credential information.

The wizard requests the computer name of the source and target Microsoft Exchange servers. The specified source and target servers can be in the same Microsoft Exchange organization or in different Microsoft Exchange organizations. Once you have created a project, you cannot change the source and target servers for that project. However, you can create additional projects to migrate between other servers.

5. Click **Finish**.

## Modifying a Project

You can modify a project by adding or removing objects, or by changing the migration options. You should implement project changes before you migrate objects in the project. If you want to change the settings of migrated objects, first undo the object migration, and then remigrate the specified objects using the modified settings.

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### Note

Once you have created a project, you cannot change the source and target servers for that project. However, you can create additional projects to migrate between other servers.

---

### To modify a project:

1. In the left pane of the console, select the migration project you want to modify.
2. In the right pane, click the icon associated with the settings you want to modify.
3. Follow the wizard instructions until you have finished specifying the changes for that project.

## Removing a Project

You can remove a project by selecting the project in the left pane and then clicking **Remove Project** on the Action menu. Removing a project deletes the project and all of its settings. Removing a project does *not* remove objects from the source or target Microsoft Exchange servers. You cannot restore a deleted project.

## Pre-Migration Tasks

You should complete all pre-migration tasks in NetIQ Exchange Migrator before you actually migrate objects. Use the information provided in the following sections along with the migration checklist as a guide for your migration. For more information about the steps required to complete a migration, see [“Migration Checklist: Start to Finish”](#) on page 43.

Pre-migration tasks include the following:

- Specifying migration options
- If applicable, importing mappings from Domain Migration Administrator
- Selecting objects you want to migrate in a project
- Reviewing the selected objects in a project

## Selecting Appropriate Migration Options

Once you have created a project, run the Specify Migration Options wizard to define how NetIQ Exchange Migrator handles various options such as merging source and target mailboxes, email addressing, and pre-process or post-process scripting. The following steps provide migration options for various migration scenarios. Select the migration options that apply to your migration.

To specify migration options:

1. In the left pane of the console, select the project for which you want to specify migration options.
2. In the right pane, click **Step 1: Specify Migration Options**.
3. Click **Next**.
4. In the Select Mail Profiles window, select the appropriate source and target mail profiles, and then click **Next**. The mail profile should have appropriate access permissions to the source and target Microsoft Exchange servers. For more information, see [“Microsoft Exchange Mailboxes and MAPI Profiles”](#) on page 14.
5. *If you are performing a cross-organization migration*, select the appropriate account merge options in the Select Windows Account Merge Options window, and then click **Next**. For more information about what options to select, see the Help.
6. *If you are performing an intra-organization migration*, specify how NetIQ Exchange Migrator should handle cases where no DMA mapping exists for a migrated mailbox, and then click **Next**.
  - *If you select the option to **Create a new Windows account for the migrated mailbox***, Exchange Migrator creates a user account on the target and then moves both the account and the mailbox. If a target account with the same sAMAccountName already exists, NetIQ Exchange Migrator adds a numeric suffix to the sAMAccountName for the new account.
  - *If you select the option to **Merge the account with the target that has the same sAMAccountName***, Exchange Migrator moves the mailbox to the target and merges the source account properties with the target account.
  - *If you select the option to **Associate the source account with the target migrated mailbox***, Exchange Migrator maintains the existing Windows account in the source domain with its source account rights and does not create new accounts in the target domain.

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### Note

When you select this option, NetIQ Exchange Migrator does not remove migrated mailboxes from the source and does not create them on the target. Only the mailbox database is migrated from the source to the target. However, Exchange Migrator does remove migrated distribution lists and contacts from the source and creates them on the target. When you migrate distribution lists and contacts with the **Create a new Windows account for the migrated mailbox** option, the migration behavior is the same whether or not you select the **Associate source account with the target migrated mailbox** option.

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7. *If you are performing a cross-organization migration*, in the Select Target OU window, select an OU on the target server to which you want to migrate objects, and then click **Next**. If you leave the **Target OU** field blank, NetIQ Exchange Migrator migrates objects to the default target container.

8. *If you are performing an intra-organization migration*, in the Select Target OU window, select an OU on the target server to which you want to migrate objects, and then click **Next**. The target OU you specify is taken into account only while NetIQ Exchange Migrator is creating the target account. If you leave the **Target OU** field blank, NetIQ Exchange Migrator migrates objects to the default target container.

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**Note**

If you selected the **Associate source account with target migrated mailbox** option on the Select Windows Account Migration Options window, the Select Target OU window is not applicable to the migrated mailboxes. However, the options still apply to distribution lists and contacts.

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9. In the Password Options window, select the options that are appropriate for your migration, and then click **Next**. If there is a mapping between a source mailbox and a target user account, by default NetIQ Exchange Migrator does nothing to the password. You have the option to change the password on mapped target accounts.
10. *If you are performing a cross-organization migration*, in the Mail Flow Options window, specify the mail flow options you want, and then click **Next**. For migrations to Microsoft Exchange Server 2003, the recommended configuration is to migrate mailboxes without data and switch mail flow later.
11. *If you are performing an intra-organization migration*, the mail flow options you would specify in the Mail Flow Options window for a cross-organization migration scenario are not applicable. In intra-organization migrations, NetIQ Exchange Migrator always moves mailboxes with data. Read the information on this window and then click **Next**.
12. In the Select Information Stores window, select the appropriate target mailbox store, and then click **Next**.
13. In the Scripting window, select if you want to use scripts to customize your migration, and then click **Next**.
14. In the Email Address Options window, specify how you want NetIQ Exchange Migrator to handle email addresses during your migration, and then click **Next**. For more information about the options to select, see the Help.
15. In the Select Mapping File Location window, select a mapping file in which to store migrated objects information, and then click **Next**. The EMProfileUpdate utility uses the mapping file to update client mail profiles after migration.
16. In the Customize Migration Processing window, select the option to retain populated properties on target objects when merging accounts, and then click **Next**.
17. In the Summary window, verify your selections, and then click **Finish**.

## Mapping to Existing Objects on the Target Server

You can create mappings or import mappings to your target accounts. The ability to map objects allows you to move easily from your domain migration to your Microsoft Exchange migration.

### Creating Mappings Based on a Common Property

You can create mappings to target user accounts on a target Active Directory server. NetIQ Exchange Migrator can map source and target accounts if the accounts share the same SIDHistory attribute, sAMAccountName attribute, or SMTP address. You can also map source and target accounts using a mapping file from Domain Migration Administrator. To map accounts based on SIDHistory, your target Microsoft Exchange server must be running in a native-mode Active Directory domain.

For cross-organization migrations, NetIQ Exchange Migrator merges source and target accounts that share the specified property when you migrate the source accounts. The Specify Migration Options wizard provides options for merging accounts based on an account property. NetIQ Exchange Migrator applies the option you specify for all source accounts that can be mapped to target accounts. NetIQ Exchange Migrator migrates source accounts that cannot map to a target account as new target accounts.

If **Custom Attribute 10 (10)** is set to **NTDSNoMatch** on a source mailbox, NetIQ Exchange Migrator does not merge the source mailbox into a target account. Instead, Exchange Migrator creates a new account.

For intra-organization migrations, you can specify whether NetIQ Exchange Migrator creates a new Windows account for the migrated mailbox, associates the source account with the target migrated mailbox, or merges the source account with a target account that has the same **sAMAccountName**. For this migration scenario, NetIQ Exchange Migrator migrates account SIDs to the target domain as part of the process of creating a new Windows account. There is no merge by **SIDHistory** option for intra-organization migrations. For more information about intra-organization migration options, see [“Selecting Appropriate Migration Options”](#) on page 50.

## Importing Object Mappings from Domain Migration Administrator

You can use Domain Migration Administrator (DMA) to simplify your migration process. NetIQ Exchange Migrator lets you use information in the DMA database to assist NetIQ Exchange Migrator in mapping migrated mailboxes to the proper target user accounts. NetIQ Exchange Migrator uses the mappings for all projects you create.

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### Note

To import object mappings from Domain Migration Administrator in NetIQ Exchange Migrator, you must have Domain Migration Administrator 8.0 installed in your environment. NetIQ Exchange Migrator uses the SQL Server 2008 database that was implemented in DMA 8.0 and does not work with earlier versions of DMA that used a Microsoft Access database. Whether you are using NetIQ Exchange Migrator with a SQL Server 2005 or SQL Server 2008 database, you can import mappings from DMA as long as you have DMA 8.0 installed.

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If you import Domain Migration Administrator mappings more than once, the original information is not overwritten. Existing entries are ignored, but NetIQ Exchange Migrator appends new **SourceSAM account name** references to the table. The **SourceSAM account name** value is equivalent to the Domain Migration Administrator **SourceSamName** value. For more information about how to use Domain Migration Administrator, see the *User Guide for Domain Migration Administrator*.

Do not use Domain Migration Administrator to translate security for unmigrated Microsoft Exchange mailboxes. NetIQ Exchange Migrator cannot utilize the mapping database if you migrate objects after security is translated in Domain Migration Administrator. To translate security for unmigrated source mailboxes, merge mailboxes based on a common property instead of importing mappings from Domain Migration Administrator.

### To import mappings from Domain Migration Administrator:

1. In the left pane of the NetIQ Exchange Migrator console, select **Exchange Migrator**.
2. On the Action menu, click **Import mappings from Domain Migration Administrator**.
3. In the Connect to DMA Database window, provide valid credentials for the DMA database to enable NetIQ Exchange Migrator to connect to the database, and then click **OK**.

If the connection to the DMA database is successful, NetIQ Exchange Migrator reads the SQL Server database and imports the appropriate information. After importing the mappings, NetIQ Exchange Migrator displays the number of imported object mappings and any errors encountered during the import process in the right pane.

## Selecting Objects to Migrate

Once you have created a project, you can add objects you want to migrate. You have to independently select mailboxes, distribution lists, contacts, public folders, and directory information.

You can add mailboxes, distribution lists, and contacts using the Select Objects wizard. The wizard provides the option to select objects from the Global Address List (GAL) or import them using a comma-separated value (.csv) file. You can add public folders separately using the Select Public Folders wizard.

By default, NetIQ Exchange Migrator allows you to add a maximum of 5000 mail objects or 500 public folders to a project at one time. If you need to migrate a large number of mail objects or public folders, create separate projects for groups of less than 5000 mail objects or 500 public folders. The default maximums are appropriate for most environments, but if necessary you can change them by modifying registry keys. For more information, see [“Overriding the Default Number of Mail Objects or Public Folders You Can Add to a Project at a Time”](#) on page 37.

### Selecting Mail Objects Using the GAL

The Global Address List (GAL) serves as a directory for mailboxes, distribution lists, and contacts for each Microsoft Exchange organization. However, depending on the address book view you use, you may be able to select objects that do not reside on the source Microsoft Exchange server for the project. NetIQ Exchange Migrator migrates only objects on the source server you have identified for the project, though you can select objects that do not reside on the source server.

You can use any address book view to select the objects you want. To select objects on only the source server, use the address book for that server. You can also select objects from any other address book views you created in the Microsoft Exchange Administrator program.

When selecting objects from the GAL, you can select objects individually or by distribution list. Individually selecting objects allows you to select mailboxes, contacts, and distribution lists without list members. Selecting objects by distribution list includes the members of selected distribution lists in the migration. Select mailboxes, contacts, and distribution lists using the Select Objects wizard.

### Selecting Mail Objects from a .CSV File

You can import a group of objects from a comma-separated value (.csv) file instead of manually selecting them using the GAL. To import objects from a file, specify that you want to select objects from a file in the Select Objects wizard.

To create the file, export the required objects into a .csv file in Unicode format using a tool such as Microsoft Exchange System Manager. The .csv file must begin with `Display Name` or `DisplayName`, followed by a list of display names. For example:

```
Display Name
UserName1
UserName2
UserName3
```

You can use the same .csv file to add more objects to the project just by editing the .csv file and then reimporting the file using the Select Objects wizard. Exchange Migrator ignores the objects you imported previously, and imports only the objects you added to the file.

NetIQ Exchange Migrator does not support generating .csv files that include all the objects in the GAL. If you generate a .csv file using Microsoft Exchange System Manager, ensure you include only those objects in the source organization.

Once you have completed the Select Objects wizard, NetIQ Exchange Migrator adds the objects listed in the .csv file to the project. However, if any of the objects in the source domain have the same display name, NetIQ Exchange Migrator generates a second .csv file that lists the duplicate objects. This file is saved in the same location as the original .csv file, with `_tempFormatFile` appended to the original file name. For example, if your original file was named `MyFile.csv`, the second file is named `MyFile_tempFormatFile.csv`. The second file begins with `LegacyExchangeDN` or `Legacy ExchangeDN` at the top of the file, followed by a list of legacy Exchange distinguished names, such as the following:

```
LegacyExchangeDN
/o=msdom001-2003-exchange-Organization/ou=First Administrative Group/cn=Recipients/
cn=UserName2
/o=msdom001-2003-exchange-Organization/ou=First Administrative Group/cn=Recipients/
cn=UserName
```

You can review this file, remove the objects that you do not want to import, and then run the Select Objects wizard again using this file to import objects that were not added from the first file.

## Selecting Mail Objects for Your Project

Complete the following steps to select the mail objects you want to include in your migration project.

**To select mail objects for your migration project:**

1. In the left pane, select the project to which you want to add objects.
2. In the right pane, click **Step 2: Select Mail Objects**.
3. Click **Next**.
4. *If you want to select objects from the Global Address List*, click **Select objects by browsing the global address list**, and then select whether to include individual objects or distribution lists and their members.
5. *If you want to select objects by importing a CSV file*, click **Select objects by importing a CSV file**.
6. Click **Next**.
7. *If you chose to select objects from the Global Address List*, complete the following steps:
  - a. Click **Add** and add objects to the project you want to migrate.
  - b. Click **Next**.
8. *If you chose to select objects by importing a comma-separated value file*, complete the following steps:
  - a. Browse to the file you want to use.
  - b. Select the file, and then click **Open**.
9. Click **Finish**.

## Selecting Public Folders

Select public folders using the Select Public Folders wizard. By default, selecting or deselecting a parent folder selects or deselects any sub-folders. You can also individually select or deselect sub-folders to migrate only those folders you want. NetIQ Exchange Migrator migrates the folder hierarchy of any selected folder, but does not migrate the contents of a parent folder unless you also select the parent folder. You can also change this default behavior by clearing the **Automatically select sub-folders when a folder is selected** option. For more information, see the Help.

**To select public folders for your migration project:**

1. In the left pane, expand the project for which you want to select objects.
2. In the right pane, click **Select Public Folders**, and then click **Next**.
3. Click **Add** to select the public folders for your project, and then click **OK**.
4. Click **Next**, and then click **Finish**.

## Viewing Selected Objects

You can review the objects that have been added to a project along with other important information, such as the object alias, source path, and migration status. NetIQ Exchange Migrator supports four basic object types and displays each type separately: mailboxes, contacts, distribution lists, and public folders.

**To view selected objects for a project:**

1. In the left pane, expand the project you want to review.
2. In the left pane under the project, select an object type, such as Mailboxes.  
  
NetIQ Exchange Migrator displays objects of the selected type that are included in the project in the right pane. You can view objects alphabetically for each category with data.
3. To sort objects alphabetically by name, click **Name** in the gray heading at the top of the list. To sort objects in reverse order, click **Name** again.

## Removing Objects from a Project

If you mistakenly add objects to a project you do not want to migrate, you can easily remove them.

**To remove objects from a project:**

1. In the left pane, expand the project from which you want to remove objects.
2. In the left pane, select the category, such as Mailboxes or Contacts, from which you want to remove objects.
3. In the right pane, select the object you want to remove, and then on the **Action** menu click **Remove from Project**.

# Migration Tasks

After completing the appropriate pre-migration tasks for your projects, use the information provided in the following sections along with the migration checklist as a guide for your migration. For more information, see [“Migration Checklist: Start to Finish”](#) on page 43.

## Migrating Objects Using the Migration Wizards

NetIQ Exchange Migrator offers two migration wizards: Migrate Mail Objects and Migrate Public Folders. Run the migration wizards to migrate objects in each project. NetIQ Exchange Migrator migrates mailboxes and public folders separately, even though you specify the migration settings for both mailboxes and public folders using the Specify Migration Options wizard. Refer to the migration checklist to determine the order in which to migrate objects. For more information, see [“Migration Checklist: Start to Finish”](#) on page 43.

NetIQ Exchange Migrator automatically checks for required files and permissions on the source, target, and console computers before migrating objects, and displays an error message if it identifies errors or omissions.

NetIQ Exchange Migrator automatically detects any network connectivity failure during mailbox migration and gives you the following options:

- Save the migration and resume the migration manually when the connection is restored
- Cancel the migration and restart the migration process

NetIQ Exchange Migrator displays errors encountered during the migration process in the migration summary log file. For more information, see [“Log Files”](#) on page 71. To avoid errors in the migration process, verify that you have the required files and permissions before migrating objects. For more information about required permissions, see [“NetIQ Exchange Migrator Permission Requirements”](#) on page 11.

NetIQ Exchange Migrator automatically migrates permissions and other associated information. If you change migrated objects on the source Microsoft Exchange server after the initial migration, you can reconcile these changes for target objects by running the Synchronize and Update Migrated Mailboxes wizard and the Synchronize and Update Migrated Public Folders wizard. You may also need to run these wizards to see the correct permissions when you migrate multiple mailboxes with permissions at the same time.

### To migrate objects using the wizards:

1. Define a migration project that includes the objects you want to migrate. Ensure you have reviewed the migration checklist and completed all required tasks. For more information, see [“Migration Checklist: Start to Finish”](#) on page 43.
2. In the left pane, expand the project.
3. *If you are migrating mailboxes, contacts, or distribution lists*, click **Migrate Mail Objects** in the right pane.
4. *If you are migrating public folders*, click **Migrate Public Folders** in the right pane.
5. Follow the instructions in the wizard until you have finished migrating the selected objects. For more information about migration options, click **Help**.

# Migrating and Synchronizing Objects Using the Command-Line Interface

The NetIQ Exchange Migrator command-line interface (EMCLI) lets you run NetIQ Exchange Migrator from the command prompt to perform the following types of migration tasks:

- Migrate the mail objects and public folders from a specified project

EMCLI migrates the objects according to the migration options settings for the project. Ensure you have defined all project requirements before you use EMCLI to migrate objects.

- Synchronize directories, mailboxes, and public folders

NetIQ Exchange Migrator synchronizes mailboxes one-way from the source to the target organization. NetIQ Exchange Migrator synchronizes public folders bi-directionally between the source and target organizations.

- Specify the amount of time EMCLI should use to perform migration and mail or public folder synchronization tasks

For example, you can configure NetIQ Exchange Migrator to migrate objects in a project for three hours. NetIQ Exchange Migrator completes migration of as many objects as possible during the specified amount of time. During a scheduled migration, NetIQ Exchange Migrator migrates objects in batches of five objects at a time. The specified period of time can end before NetIQ Exchange Migrator completes migration for the last set of five objects in that time period. In this case, NetIQ Exchange Migrator continues to migrate the last set of objects until the object migration is complete. Verify the migration by reviewing the `EMAppLog.txt` file.

- Schedule migration tasks using the Schedule service

You can use EMCLI with the Microsoft Windows Schedule service to schedule start times for your migration tasks. The EMCLI utility lets you run migration tasks at times that are convenient for you. You can also include EMCLI commands in batch files.

- Use an EMCLI command in a batch file

## To migrate objects using the EMCLI:

1. Create a NetIQ Exchange Migrator migration project, including selecting objects and specifying migration options.
2. After you specify the migration options in your migration project, you can use EMCLI to perform migration tasks on objects in the specified project.

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### Note

If you have the NetIQ Exchange Migrator console open during an EMCLI migration, once the migration has completed, close and reopen the NetIQ Exchange Migrator console to obtain accurate status information.

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For more information about how to use EMCLI, see [“Using the NetIQ Exchange Migrator Command-Line Interface \(EMCLI\)”](#) on page 75.

## Using Reporting to Track Status

Migrating your Microsoft Exchange organizations or sites can span days, weeks, or months. NetIQ Exchange Migrator includes a number of useful reports that help you assess and track your status. You can use the reports after you define project contents and migration options. You can use the migration status reports to view project contents, review your current Microsoft Exchange organization configuration, and identify duplicate objects. If necessary, you can modify the contents of your projects based on these reports. During migration, use the reports to check the migration status. Once the migration has completed, you can use reports to view the results of the migration. For more information, see [“Reporting”](#) on page 65.

## Synchronizing and Updating Migrated Mailboxes

NetIQ Exchange Migrator allows you to update mailbox permissions and content added to or deleted from mailboxes in the source Microsoft Exchange organization after you migrate the mailbox to the target organization. Updated content includes new messages as well as new or updated calendar appointments, folders, notes, and personal contacts. Mailbox synchronization also deletes emails, calendar appointments, folders, notes, and personal contacts from the target email box that have been deleted on the source mailbox.

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### Note

The ability to update and delete mailbox content from source to target is available only when you select the option to synchronize the entire mailbox in the Synchronize and Update Migrated Mailboxes wizard, not when you choose to synchronize only those items that are new since the last synchronization.

---

You can synchronize mailboxes using the Synchronize and Update Migrated Mailboxes wizard or by using the NetIQ Exchange Migrator command line interface (EMCLI). You can schedule start times for synchronizations by using the EMCLI with the Microsoft Windows Schedule service. For example, you can schedule synchronizations to happen every night at 3 AM. You can also specify how long you want NetIQ Exchange Migrator to synchronize mailboxes. For example, you can specify NetIQ Exchange Migrator to synchronize mailboxes for two hours.

If you are operating your source and target Microsoft Exchange organizations in parallel during your migration, you should synchronize mailboxes after each public folder and mailbox migration. For more information about operating organizations in parallel, see [“Operating Source and Target Organizations in Parallel”](#) on page 32. There may be a brief delay when starting a mailbox synchronization with a target server.

### To synchronize mailboxes using the wizard:

1. In the left pane, select the project for which you want to synchronize migrated mailboxes.
2. In the right pane, click **Synchronize and Update Migrated Mailboxes**.
3. Follow the instructions until you finish synchronizing the mailboxes. For more information about an option, click **Help**.
4. Click **Finish**.

## Synchronizing Public Folders

NetIQ Exchange Migrator allows bi-directional synchronization of messages on public folders. Bi-directional synchronization means that NetIQ Exchange Migrator copies messages between public folders in the source and target organizations so that the public folders' contents mirror one another. Initial public folder migrations overwrite target client permissions. Subsequent synchronizations on the migrated public folders merge source and target public folder client permissions.

When you synchronize public folders, NetIQ Exchange Migrator copies new messages and permissions. Synchronizing recreates the message if you delete a message from either the source or target server. To completely delete a message, you must delete the message from both the source and target server. NetIQ Exchange Migrator does not resynchronize existing messages. If users modify an existing message, NetIQ Exchange Migrator does not copy changes to that message when you run public folder synchronization.

If a document changes in both the source and target organizations, NetIQ Exchange Migrator creates a synchronization conflict and does not update the document. NetIQ Exchange Migrator logs all public folder synchronization conflicts in the `EMConflicts.txt` log file. For more information, see [“Log Files”](#) on page 71.

Frequent synchronization enables migrated users logging onto the target organization to reply to posted messages from unmigrated users. For more information about scheduling public folder synchronization, see [“Synchronizing and Updating Migrated Mailboxes”](#) on page 58.

If you are operating your source and target Microsoft Exchange organizations in parallel, you should synchronize public folders after each public folder and mailbox migration. This ensures any changes made to the source organization during migration are updated to the target organization. If users are only logging onto the target Microsoft Exchange organization when you complete your migration, synchronize public folders after NetIQ Exchange Migrator migrates all mailboxes and public folders to the target Microsoft Exchange server.

Make sure you have correctly configured permissions for the source and target public folders before you attempt to synchronize them. For more information about public folder permissions, see [“Public Folder Permission Requirements”](#) on page 14.

### To synchronize public folders using the wizard:

1. In the left pane, select the project for which you want to synchronize migrated public folders.
2. In the right pane, click **Synchronize and Update Migrated Public Folders**.
3. Follow the instructions until you finish synchronizing the specified objects. For more information about an option, click **Help**.
4. Click **Finish**.

Do not rename synchronized public folders during your migration. NetIQ Exchange Migrator compares public folders using the name of the folders. NetIQ Exchange Migrator re-creates renamed folders.

NetIQ Exchange Migrator does not migrate public folders between sites within a Microsoft Exchange organization, but you can use NetIQ Exchange Migrator to update public folders in an intra-organization migration so migrated users have permissions to public folders. You must use Microsoft native tools to replicate public folders. To update the permissions on the replicated public folders for your migrated users, select your project in the left pane and on the Action menu, click **Update Source Public Folder Permissions**. To ensure migrated mailboxes have the correct access to public folders, update public folder permissions each time you migrate mailboxes to the target Microsoft Exchange server.

To correctly update permissions for public folders, you need to migrate a mail object from the source organization containing the public folders for which you want to update security. For more information, see [“Translating Public Folder Security”](#) on page 25.

## Synchronizing the Directory

You can synchronize the GAL and distribution list memberships bi-directionally between the source and target Microsoft Exchange servers using the Directory Synchronization wizard or using the EMCLI.

During directory synchronization, NetIQ Exchange Migrator updates the changes you make to distribution lists on the source and target Microsoft Exchange servers and includes new mailboxes and distribution lists that you add on the source or target servers so both servers reflect any changes. Directory synchronization allows users in both Microsoft Exchange organizations to immediately see changes in either organization. The ability to see changes allows you to operate your Microsoft Exchange organizations in parallel during your migration. For more information about how directory synchronization works, see [“Understanding Directory Synchronization”](#) on page 26.

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### Note

The Directory Synchronization task is not applicable to intra-organization migrations.

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## Directory Synchronization Using the Wizard

You can use the Directory Synchronization wizard to synchronize directory information between the source organization and the target organization.

- *If you are synchronizing from the source GAL to the target GAL*, you can specify whether to synchronize the entire GAL, only those objects in the current project, or objects in a specific OU.
- *If you are synchronizing from target to source*, you can specify whether to synchronize the entire GAL or only those objects in a specified OU.

### To update the directory information:

1. In the left pane, select your project.
2. In the right pane, click **Synchronize Directory between Source and Target**.
3. Click **Next**.
4. Follow the instructions until you finish synchronizing the directory. For more information about an option, click **Help**.
5. Click **Finish**.

## Directory Synchronization Using the EMCLI Utility

This section makes some general recommendations about how to incorporate the EMCLI utility into your migration. For more information about the EMCLI utility, including a description of syntax and options, see [“NetIQ Exchange Migrator Commands and Utilities”](#) on page 73.

Before using the EMCLI, you should first define a NetIQ Exchange Migrator migration project, including creating the project, selecting objects, specifying migration options, and synchronizing the directory.

You can use the EMCLI with the Windows Schedule service to specify when NetIQ Exchange Migrator copies directory changes. Using the Windows Schedule service lets you run synchronizations at specified intervals throughout your migration. Synchronization for a large directory may take some time when you run the utility the first time. Subsequent synchronizations should take less time since EMCLI copies only the objects you created or added to distribution lists on the source Microsoft Exchange server.

Directory synchronization updates the changes you make to distribution lists and new objects that you add on the source or target Microsoft Exchange servers so both servers reflect the changes. Directory synchronization allows users in both Microsoft Exchange organizations to immediately see any changes in the GAL. The ability to see changes allows you to maintain information flow between your source and target Microsoft Exchange organizations so you can operate your organizations in parallel during your migrations. For more information about how directory synchronization works, see [“Understanding Directory Synchronization”](#) on page 26.

## Synchronizing Calendar Free/Busy Information

Using the NetIQ Coexistence Utility, you can synchronize calendar free/busy information so migrated users can continue to schedule appointments with users who are not yet migrated. For more information about synchronizing free/busy information, see the *NetIQ Coexistence Utility Release Notes*.

## Post-Migration Tasks

NetIQ Exchange Migrator offers a host of post-migration options that allow you to retry or undo mailbox migrations and update target mailbox permissions. These options are particularly useful if your migration is complex and has multiple projects.

### Retrying Migrations

If NetIQ Exchange Migrator creates mail objects during a migration but is unable to migrate data, you have the option to retry the migration.

**To retry a migration:**

1. In the left pane, select the project containing objects that have unmigrated data.
2. On the Action menu, click **Retry Migration**. NetIQ Exchange Migrator retries to migrate the data for the objects in the selected project.

### Undoing Migrations

If the results of a migration are not what you expected, you can run the Undo Mail Objects Migration wizard to return mail objects to the source server.

NetIQ Exchange Migrator does not delete mailboxes or user accounts created on the target server when you undo a migration. You should manually delete the mailboxes created on the target server. If you want to re-migrate to this target, do not delete these user accounts. Deleting the user accounts removes the NTFS permissions and properties assigned to the accounts. When you re-migrate objects, you should merge objects into the existing accounts on the target Microsoft Exchange server using the `sAMAccountName` or `SIDHistory` attributes.

You cannot reset some mail object properties, such as distribution list delivery restrictions and distribution list membership, to their original values on the source Microsoft Exchange server when you undo a migration. You need to reset these values manually on the source Microsoft Exchange server.

If you select the **Hide source mailbox** option on the Mail Flow Options window of the Specify Migration Options wizard, NetIQ Exchange Migrator un-hides source mailboxes on the source server when you undo a migration. If you set up mail forwarding in the original migration, NetIQ Exchange Migrator also deletes the contacts it created on the source server for mail forwarding.

If you merged information from a source mailbox with a target user account already available on the target server in the original migration, NetIQ Exchange Migrator does not remove the merged information. Also, NetIQ Exchange Migrator cannot undo public folder migrations.

**To undo a migration of mailboxes, distribution lists, and contacts:**

1. In the left pane, select the project that includes the objects you want to return to the source Microsoft Exchange server.
2. In the right pane, click **Undo Mail Object Migration**.
3. Follow the instructions until you have finished undoing the migration. For more information about an option, click **Help**.
4. Click **Finish**.

## Updating Mail Flow

In some cases, you may migrate users' mailboxes before those users are ready to begin using their migrated mailboxes. In this situation, these users continue to receive mail in their original mailbox. Once you are ready to switch users to their migrated mailboxes, use the Update Mail Flow wizard to begin delivering incoming mail to the migrated mailboxes.

---

**Note**

The Update Mail Flow task is not applicable to intra-organization migrations.

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**To update the mail flow:**

1. In the left pane, select the project for which you want to update mail flow.
2. In the right pane, click **Update Mail Flow**.
3. Follow the instructions until you finish updating the mail flow for the selected project. For more information about an option, click **Help**.
4. Click **Finish**.

## Updating Migrated Client Profiles

When you have completed your migration using NetIQ Exchange Migrator, profiles on the client computers continue to point to the source Microsoft Exchange server instead of reflecting the new target Microsoft Exchange server. You can use the EMProfileUpdate utility included with NetIQ Exchange Migrator to redirect client profiles. EMProfileUpdate imports a list of migrated mailboxes and updates the appropriate profiles on the client computers. For more information, see [“Using the EMProfileUpdate Utility”](#) on page 81.

If you decide not to use the EMProfileUpdate utility to redirect MAPI profiles, do not manually modify the existing MAPI profile to point to the new target server. Instead, delete and recreate the profile to point to the new target server. This step ensures proper profile functionality after decommissioning the source Microsoft Exchange server. Although switching the server names within the profile will work while the source server continues to run, manually modifying a profile does not update the necessary registry mappings. The profile logs on to the target mailbox, but it retains registry references to the source Microsoft Exchange server. These registry references can make the profile non-functional after you decommission the source Microsoft Exchange server.

## Updating Mailbox Permissions on the Target

To update mailbox permissions after decommissioning the source server, run the Update Target Mailbox Permissions wizard. You can use this wizard after migrating and decommissioning each server or after you have decommissioned a number of servers.

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### Note

The Update Target Mailbox Permissions task is not applicable to intra-organization migrations.

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#### To update mailbox permissions after decommissioning a source server:

1. In the left pane, select the project containing objects from the decommissioned source server whose Delegate permissions you need to update.
2. In the right pane, click **Update Target Mailbox Permissions**.
3. Follow the instructions until you finish updating mailbox permissions. For more information about an option, click **Help**.
4. Click **Finish**.

## Troubleshooting Migration Issues

If your migration does not achieve the desired results, or if you encounter issues at any point during the migration, consider the following suggestions to help you in diagnosis and troubleshooting:

- Verify that your environment meets all hardware and software requirements for Exchange Migrator. For more information, see [“NetIQ Exchange Migrator Requirements”](#) on page 8.
- Ensure you can run successfully all of the applicable tests in the Pre-Migration Assessment Utility. For more information, see [“Using the Pre-Migration Assessment Utility”](#) on page 73.
- Review the EMAppI og. txt log file for possible errors.
- Use the reports provided in Exchange Migrator to provide additional information. For more information, see [“Reporting”](#) on page 65.
- Determine if the issue is a known issue with a known fix. Read the product release notes, review the top 10 knowledge base articles on the NetIQ web site, and search the product knowledge base for additional information.
- Try to determine what the issue is and identify exactly when it occurs.
- Enable detailed logging to assist NetIQ Technical Support with further investigation. For more information, see [“Enabling Cmdlets Logging”](#) on page 40.



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# Chapter 7

## Reporting

NetIQ Exchange Migrator collects information and then generates reports that help you plan the migration process or analyze the results of the migration. Reports can be useful before, during, and after migration.

NetIQ Exchange Migrator generates reports based on projects. Each project includes a source server and a target server. Reports can include only objects from the source or target server. Create a project and specify the migration options for the project before you can generate reports for that project. When you run the reporting wizard, you can generate all the reports or select individual reports to generate. If you do not generate a specific report, you can rerun the wizard to gather information and generate the reports. After you initially collect report information, you have a choice to re-gather information or to generate the report with previously-collected data. You do not need to collect new data if you have not changed project or server contents.

## Report Categories

NetIQ Exchange Migrator divides reports into the following three categories:

- Migration Status Reports
- Exchange Organization Reports
- Conflict Reports

## Migration Status Reports

The migration status reports let you review the contents of a project and track the objects NetIQ Exchange Migrator has migrated and the migration tasks NetIQ Exchange Migrator has performed for the project. The migration status reports include the following:

- Mailboxes to Migrate
- Distribution Lists to Migrate
- Contacts to Migrate
- Public Folders to Migrate
- Object Migration Status
- Migration Tasks Performed

In addition to viewing these reports, you can view objects selected for migration in the NetIQ Exchange Migrator console. Select the object type in the left pane, such as mailboxes, that you want to view for a project. NetIQ Exchange Migrator displays the mailboxes available in the project in the right pane. This information is updated dynamically. If you select an object in the right pane, you can remove it from the project. To remove the object, on the **Action** menu, click **Remove from project**.

## Exchange Organization Reports

The Exchange organization reports display useful information about the Microsoft Exchange servers. The server reports show information about both source and target servers. Other reports display information about objects on the source server. NetIQ Exchange Migrator provides the following Exchange organization reports:

- List of Members and Their Distribution Lists
- Mailbox Permissions
- Mailbox by Size
- Mailbox by Last Logon
- Mailbox Email Address List
- Mailbox by Display Name
- Mailbox by NT Account
- Contacts Email Address List
- Distribution List Email Address List
- Distribution List Owner
- List of Distribution List Members
- Public Folders by Size
- Server Information
- Server Space Available
- Server Space Used

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### Note

The Mailbox by Display Name and Mailbox by NT Account reports display information only for source mailboxes. In intra-organization migrations, mailboxes and AD accounts are moved to the target. Since they no longer exist in the source domain, these objects do not show up in these reports if you run the reports after migration.

---

## Conflict Reports

The conflict reports identify objects on the source and target Microsoft Exchange servers with the same SMTP, X400, or cc:Mail addresses. NetIQ Exchange Migrator does not check objects on other servers within the Microsoft Exchange organization. NetIQ Exchange Migrator provides the following conflict reports:

- Duplicate Mailboxes & Distribution Lists
- Contacts Referenced by Target Objects
- Objects Referenced by Target Contacts

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### Note

Conflict reports are applicable only to cross-organization migration scenarios. Microsoft Exchange does not allow duplicate mailboxes or object references in the same organization, so these types of conflicts do not occur in intra-organization migrations. If you run any of the conflict reports for an intra-organization migration, the reports will be empty.

---

## Generating Reports

NetIQ Exchange Migrator provides many useful reports to help you assess the state of your migration and track your progress. When you gather reporting information, NetIQ Exchange Migrator creates files for the reports you select and stores them in a folder for each project. Use the Gather Reporting Information wizard to collect report data after you select objects to include in a project and specify the migration options for the project.

You can run the wizard in a number of ways:

- Select a project in the left pane and click the task pad link for the wizard in the right pane.
- Select a report in the left pane. On the **Action** menu, click **Generate This Report**.
- Right-click a report in the left pane and click **Generate This Report**.

The first time you run the Gather Reporting Information wizard, NetIQ Exchange Migrator collects information from the source and target servers before generating the specified reports. Information collection can take several minutes if the source and target servers contain a large number of objects. NetIQ Exchange Migrator displays progress bars until it finishes collecting information.

After the initial information collection, in the Reporting Wizard you can choose to generate reports using previously collected data or you can collect new information. If the contents of either the source or target server have changed, or if you have changed the project contents, you should gather new information or update the stored information. The wizard gives you the option to run a single report, a group of reports, such as the conflict reports, or even all reports.

Not all reports provide information at the same time. For example, before you migrate objects, the conflict reports can be quite useful. However, the migrated objects reports do not yet have any data to report. If you have not included any objects in the project yet, the objects to be migrated reports do not show any data.

# Viewing and Navigating Reports

After NetIQ Exchange Migrator gathers reporting information, you can select the reports you want to generate. NetIQ Exchange Migrator saves reports in HTML format for viewing using the NetIQ Exchange Migrator console or Microsoft Internet Explorer. NetIQ Exchange Migrator stores the HTML report files in the project folders under the `Program Files\NetIQ\Exchange Migrator` folder.

- To view a report in the NetIQ Exchange Migrator console, expand the appropriate project in the left pane and then expand the Migration Reports folder. Select the report you want to view and NetIQ Exchange Migrator displays the report in the right pane. The navigation bar at the top of the report lets you view the report page by page or jump to any page in the report.
- To view a report using a browser, use Windows Explorer to locate the HTML report file in the appropriate project folder. The default location for reports is `Program Files\NetIQ\Exchange Migrator\projectname`. To ensure the browser window includes the navigation bar for the report, select report names ending in two underscore characters (`__`), such as `EOS SrvSpaceAvail__`.

If you change your monitor resolution while viewing reports, the navigation bar may not display all the control icons. If you need to change the screen resolution, close NetIQ Exchange Migrator, change the resolution, and then restart NetIQ Exchange Migrator.

## Printing Reports

You can print reports that NetIQ Exchange Migrator displays in the right pane. Certain reports may contain more columns than you can print directly from the console. You can also print reports from Microsoft Word or any other application that opens HTML files. When you generate a report for a project, NetIQ Exchange Migrator creates a folder with the project name in the NetIQ Exchange Migrator directory and saves reports as HTML files in the folder.

### To print a report from the NetIQ Exchange Monitor console:

1. In the left pane, expand **Exchange Migrator**.
2. In the left pane, expand the project that contains the job with the report you want to print.
3. In the left pane, expand **Migration Reports**.
4. Expand the report category that contains the report you want to print.
5. In the left pane, select the report you want to print.
6. Click the print icon on the menu bar.

---

## Chapter 8

# Customizing Migration with Scripting

NetIQ Exchange Migrator provides a flexible environment in which you can apply customized processing scripts to meet your specific needs. NetIQ Exchange Migrator runs the script when the following specific events occur during the migration process for each object type you are migrating:

- Pre-migration events allow a script to get or change the value of properties of mailboxes, distribution lists, contacts, public folders, and directory information on the source server.
- Post-migration events allow a script to get or change values for the properties of mailboxes, distribution lists, contacts, public folders, and directory information on the source or target servers.

NetIQ Exchange Migrator supports pre-process and post-process scripting events for the following objects:

- Mailboxes
- Distribution lists
- Contacts
- Public folders
- Objects migrated as contacts

Choose whether to use scripts, the script language (VBScript or JScript), and whether to use the IADs object pointers on the Use Scripting window in the Specify Migration Options wizard. Using a script that relies on the IADs pointers can be powerful, but can also impact migration performance. Choose an event and insert the script for the event on the Scripting window in the Specify Migration Options wizard.

NetIQ Exchange Migrator runs pre-process scripts before creating the user account or contact on the target server. NetIQ Exchange Migrator runs post-process scripts after creating the migrated object on the target server and before copying the object data to the target server.

# NetIQ Exchange Migrator Script Objects

NetIQ Exchange Migrator supports the following objects for scripts. For more information about methods and properties using the IADs and ADSI interface, see the ADSI documentation available from Microsoft.

<b>sourceIADs</b>	The IADs pointer to properties for mailboxes, distribution lists, and contacts defined in the source domain. Use this object in pre-process or post-process scripts to read ( <b>get</b> ) source object property values.
<b>targetIADs</b>	The IADs pointer to properties for mailboxes, distribution lists, and contacts defined in the target domain. Use this object in post-process scripts to write ( <b>put</b> ) target object property values.
<b>varsetObject</b>	Object properties currently stored in the NetIQ Exchange Migrator database. You can read ( <b>getProperty</b> ) these property values to perform some intelligent processing and write ( <b>setProperty</b> ) new property values.

## Example Scripting Format

The following sample shows the format for writing scripts in the NetIQ Exchange Migrator environment. To use the following VBScript, select **Include IADs pointers** on the Use Scripting window of the Specify Migration Options wizard.

```
objectname = varsetObject.getProperty(someValue)
sourceIADs.put someProperty, objectname
mailbox sourceIADs.name
```

## Sample Script to Exclude an Object Based on a Property Value

You may want to exclude some objects from a migration based on the value of a specific property of the object. The following sample script checks whether an object is currently being excluded. If the object is included for migration, the script checks the State property. If the property value is Texas, NetIQ Exchange Migrator does not migrate the object. To use the following mailbox pre-process VBScript sample, select **Include IADs pointers** on the Use Scripting window of the Specify Migration Options wizard.

```
SkipppedObject = varsetObject.getProperty("DirMigr.CurrentObject.Skip")
if SkipppedObject <> "yes" Then

state = sourceIADs.get("st")
if state = "Texas" Then
    'Change the exclusion condition above to exclude
    'an object based on other criteria

    varsetObject.setProperty "DirMigr.CurrentObject.Skip", "yes"
end if
end if
```

---

# Appendix A

## Log Files

NetIQ Exchange Migrator provides several log files to help track migration status, progress, and potential problems. NetIQ Exchange Migrator can create the following log files:

- Database location log
- Migration summary log
- Public folder synchronization conflict log
- Application log
- Developer log

NetIQ Exchange Migrator stores these files in the **Logs** subfolder of the folder where you installed NetIQ Exchange Migrator. If you install NetIQ Exchange Migrator in the default location, the log files are stored in `Program Files\NetIQ\Exchange Migrator\Logs`. You can view the log files after you run a migration wizard or by using a text editor, such as Notepad.

### **EMAPuginsHarvest.log**

Identifies the location of the NetIQ Exchange Migrator database file name, server, and path. By default, the NetIQ Exchange Migrator database is created in the folder where you install NetIQ Exchange Migrator.

### ***projectname datestamp.log***

Displays information about the last completed scheduled migration. The file lists the migration start and stop time, the distinguished name of all objects in a migration, migration status for each object, and error messages. Each time you perform a migration, NetIQ Exchange Migrator creates a new migration summary file. NetIQ Exchange Migrator stores summary logs in the Logs folder.

### **EMConflict.txt**

Lists conflicts encountered during public folder synchronizations. NetIQ Exchange Migrator lists each message with a different message or subject as a separate conflict.

### **EMAppLog.txt**

Stores migration operations, status, and error messages. Each time you perform an operation in NetIQ Exchange Migrator, text about the operation is added to this log file. Review this file for details about errors or migration failures.

### **EMDevLog.txt**

Displays information that helps technical support diagnose migration issues. NetIQ Exchange Migrator generates this file when you set the diagnostic utility to the maximum log level.



---

## Appendix B

# NetIQ Exchange Migrator Commands and Utilities

NetIQ Exchange Migrator includes a command-line interface and several utilities:

- The NetIQ Pre-Migration Assessment Utility
- The NetIQ Exchange Migrator Command-Line Interface (EMCLI)
- The NetIQ Exchange Migrator EMProfileUpdate utility
- The DBManager utility
- The NetIQ Coexistence Utility
- The NetIQ SharePoint Migration Utility

The following sections provide detailed information and instructions for using each of these tools.

## Using the Pre-Migration Assessment Utility

The NetIQ Pre-Migration Assessment Utility is a tool that you can run as part of your pre-migration planning to help you assess your current environment. The utility verifies network connectivity and performs various other assessment tests in your migration environment. By running these tests prior to migration, you can minimize migration errors and delays during the migration itself. The utility performs the following types of tests:

### Connectivity Tests

Verifies network connectivity with the source and target Exchange servers, and with the source and target Active Directory servers.

### Exchange Tests

Retrieves Exchange information for the source and target Exchange servers, verifies the Exchange Server services are running on the source and target servers, and verifies the appropriate Microsoft Exchange Management Tools are installed on the Exchange Migrator console computer.

## Permissions Tests

Verifies the source and target server credentials you provided have the required permissions for the migration scenario you specified (intra-organization or inter-organization) on the Credentials window, and verifies the target user account has local administrator permissions.

## Profile Tests

Verifies the availability of MAPI profiles that point to source and target Exchange servers that Exchange Migrator needs to use during the migration process. The utility verifies that the source and target profiles point to the source and target Exchange servers, and also verifies that the profiles can log in to their respective Exchange servers. If public folder storage exists for the profiles, the utility also verifies that the profiles can open those public folders.

# Installing the Pre-Migration Assessment Utility

The Pre-Migration Assessment Utility is available in the NetIQ Exchange Migrator installation kit. Install the utility on the same computer where you install NetIQ Exchange Migrator. You can install the utility either before or after you install NetIQ Exchange Migrator.

There are no prerequisites for installing the Pre-Migration Assessment Utility. However, the utility does have prerequisites for running tests. For more information, see [“Running Tests in the Pre-Migration Assessment Utility”](#) on page 74.

### To install the Pre-Migration Assessment Utility:

1. Log on to the NetIQ Exchange Migrator console computer.
2. Run the `SETUP.EXE` program in the root folder of the NetIQ Exchange Migrator installation kit.
3. In the left pane, click **Start Installation**, and then click **Click here to install the NetIQ Pre-Migration Assessment Utility**.
4. Follow the instructions in the setup program to install the Pre-Migration Assessment Utility.

# Running Tests in the Pre-Migration Assessment Utility

Before you run tests in the Pre-Migration Assessment Utility, review the requirements for using NetIQ Exchange Migrator and performing a migration. For more information, see [“NetIQ Exchange Migrator Requirements”](#) on page 8. Ensure your source and target servers meet the specified minimum software requirements for your migration scenario. For more information, see [“Source and Target Software Requirements”](#) on page 6.

To log in to the utility and run tests, you need the names of the source and target Exchange Server computers and the user account credentials to enable the utility to connect to those servers.

Complete the following steps to run pre-migration assessment tests.

### To start the Pre-Migration Assessment Utility and run tests:

1. In the NetIQ Pre-Migration program folder, click **Assessment tool**.
2. On the Credentials window, specify whether you want to run tests for an intra-organization or inter-organization Exchange migration in your environment.
3. Provide credentials for the source and target Exchange servers that you plan to use in your migration, and then click **OK**.
4. On the main window of the utility, select the tests you want to run and click **Execute**. The utility displays summary information for each test you ran.

5. *If you want to see more detailed information about each test*, click **View last run report**.

On the Preview window, tests are categorized according to whether they failed or succeeded. Select a test in the navigation pane to view detailed information for that test in the results pane. You can view and format this information, export the information to a file in a variety of formats, or email the report file. Specify the action you want to take using the toolbar icons or menu items. Close the Preview window to return to the main utility window.

6. *If you want to rerun failed tests*, once you have addressed the issues that caused the tests to fail, on the main utility window, click **Tests > Select failed tests** and then click **Execute**.

7. *If you did not run all the tests at once and you want to run any skipped tests*, on the main utility window, click **Tests > Select not started tests** and then click **Execute**.

Ensure you can run all tests successfully in your environment using the Pre-Migration Assessment Utility before you attempt to perform your production migration. You can also run reports in Exchange Migrator to obtain additional information that may help you assess your environment and plan your migration. For more information, see [“Reporting”](#) on page 65.

## Using the NetIQ Exchange Migrator Command-Line Interface (EMCLI)

The NetIQ Exchange Migrator command-line interface (EMCLI) allows you to run NetIQ Exchange Migrator from the command prompt to perform migration and synchronization tasks. This section provides information about the correct EMCLI syntax and options.

Run the NetIQ Exchange Migrator command-line interface from the folder where you installed NetIQ Exchange Migrator. For more information, see [“Migrating and Synchronizing Objects Using the Command-Line Interface”](#) on page 57.

---

### Note

*If you have the NetIQ Exchange Migrator console open during an EMCLI migration*, once the migration has completed, close and reopen the NetIQ Exchange Migrator console to obtain accurate status information.

---

### Syntax

If a project name or file name contains spaces, enclose the name in quotation marks (“project name with spaces”).

```
EMCLI {MMIG|PFMIG|MSYNC|PFSYNC|IMPORT|VALIDATE|MKMLIST|MLISTMIG}
/PROJECT "project name" [/FILE filename] [/SOURCE user /SOURCEDOMAIN domain /
SOURCEPASSWORD password] [/TARGET user /TARGETDOMAIN domain /TARGETPASSWORD
password] [/TIME x] [/Incremental] [/PermissionsOnly] [/RemoveDeleted]
```

```
EMCLI DIRSYNC /PROJECT "project name" [/DIRECTION direction]
[/SOURCE user /SOURCEDOMAIN domain /SOURCEPASSWORD password] [/TARGET user /
TARGETDOMAIN domain /TARGETPASSWORD password] [/SOURCECONTAINER "container"] [/
TARGETCONTAINER "container"] [/MERGEMETHOD mergetype] [/VERBOSE] [/VERYVERBOSE] [/
CLEARTABLES] [/disablerevali dati on|/dv]
```

## Options

{MMI G|PFMI G|MSYNC|PFSYNC|I MPORT|VALI DATE|DI RSYNC|MKMLI ST|MLI STMI G}

Specify the operation you want EMCLI to perform on the specified objects. Use only the operations listed in the following table.

### Note

Not all EMCLI operations and options are applicable to all migration scenarios. For example, DI RSYNC is not applicable to intra-organization migrations.

Operation	Description
MMI G	Migrates mailboxes in the specified project.
PFMI G	Migrates public folders in the specified project.
MSYNC	Performs a one-way synchronization of mailboxes in the specified project. NetIQ Exchange Migrator does not support two-way mailbox synchronization. Mailbox data is copied from the source Microsoft Exchange server to the target Microsoft Exchange server. If you do not specify any of the mailbox synchronization parameters (/I ncremental , /Permi ssi onsOnl y, or /RemoveDel eted), NetIQ Exchange Migrator performs a full mailbox synchronization.
PFSYNC	Performs a two-way synchronization of public folders in the specified project. NetIQ Exchange Migrator does not support one-way public folder synchronization. NetIQ Exchange Migrator copies new messages posted on the source and target Microsoft Exchange servers so the servers contain the same information after synchronization. Conflicts encountered during synchronizations are posted to the Public Folder Synchronization Log. For more information, see <a href="#">“Log Files”</a> on page 71.
I MPORT	Imports the contents of the specified comma-separated value (. csv) file into the specified project.
DI RSYNC	Synchronizes directories on the source and target Microsoft Exchange organizations. This operation copies the Global Address List, selected mailbox properties, and distribution list membership so the source and target organizations contain the same information after synchronization. Once you start directory synchronization, NetIQ Exchange Migrator continues the synchronization until the synchronization is complete. This operation cannot be combined with the /TI ME option.  DI RSYNC migrates the properties of a source object only when that object is not found in the target. That is, if the object was already created by NetIQ Exchange Migrator, NetIQ Exchange Migrator does not copy new properties to the target organization.
VALI DATE	Validates the specified project and displays the validation results onscreen. This operation validates the following configuration requirements: <ul style="list-style-type: none"><li>• Source and target profiles are valid</li><li>• Required permissions are present for the local computer, source computer, target computer, and console computer</li><li>• Domain Name Service is operational</li><li>• Required files are present</li></ul>

Operation	Description
MLI STMI G	<p>Migrates each mailbox object in the specified project and file and provides return codes for the status of each object that was migrated. EMCLI returns one of the following codes:</p> <ul style="list-style-type: none"> <li>• 0</li> </ul> <p>All mailbox items migrated successfully.</p> <ul style="list-style-type: none"> <li>• 1</li> </ul> <p>One or more warnings occurred during the migration. Warnings occur when NetIQ Exchange Migrator encounters a problem migrating a mailbox message.</p> <ul style="list-style-type: none"> <li>• 2</li> </ul> <p>One or more errors occurred during the migration. Errors occur when NetIQ Exchange Migrator encounters a problem migrating the mailbox object, including not being able to log on to the mailbox.</p>
MKMLI ST	<p>Creates a text file containing a record for each mailbox object in the specified project that has not been migrated. The file contains one mailbox record per line in the following format: mb_dn[TAB]di sp_name[TAB]al i as[TAB]obj _type[TAB]fl ag[EOL]</p> <p>The fields are defined as follows:</p> <ul style="list-style-type: none"> <li>• mb_dn</li> </ul> <p>Specifies the source Microsoft Exchange mailbox distinguished name.</p> <ul style="list-style-type: none"> <li>• di sp_name</li> </ul> <p>Specifies the mailbox display name.</p> <ul style="list-style-type: none"> <li>• al i as</li> </ul> <p>Specifies the mailbox alias.</p> <ul style="list-style-type: none"> <li>• obj _type</li> </ul> <p>Specifies the object type (mailbox, contact, or distribution list).</p> <ul style="list-style-type: none"> <li>• fl ag</li> </ul> <p>Specifies the flag for internal use.</p> <ul style="list-style-type: none"> <li>• [TAB]</li> </ul> <p>Specifies the tab character.</p> <ul style="list-style-type: none"> <li>• [EOL]</li> </ul> <p>Specifies the end of line marker.</p>

`/PROJECT "proj ect name"`

Specifies the name of the NetIQ Exchange Migrator project. If the project name contains spaces, enclose the name in quotation marks.

`/FILE "fi le name"`

Specifies the name of the output file NetIQ Exchange Migrator creates when using the MKMLI ST option. For more information about the syntax of this file, see the description of the MKMLI ST option.

Specifies the name of the input file containing mailbox items that have not been migrated when using the MLI STMI G option. If the file name contains spaces, enclose the name in quotation marks.

`[/TIME=x]`

Specifies the number of hours to run the specified migration task. This option can only be used with the MMI G, PFMI G, MSYNC, and PFSYNC options.

[/DIRECTION direction]

Specifies the direction of the directory synchronization. Use this command in combination with the DIRSYNC option. You can copy information one-way or bi-directionally between the source and target Microsoft Exchange servers using one of the following options:

SOURCETOTARGET

Copies information one way from the source to the target Microsoft Exchange server.

TARGETTOSOURCE

Copies information one way from the target to the source Microsoft Exchange server.

TWOWAY

Copies information bi-directionally between both the source and target Microsoft Exchange servers.

[/SOURCENAME user /SOURCEDOMAIN domain /SOURCEPASSWORD password]

Specifies alternate credentials to connect to the source Microsoft Exchange server.

[/TARGETNAME user /TARGETDOMAIN domain /TARGETPASSWORD password]

Specifies alternate credentials to connect to the target Microsoft Exchange server.

[/SOURCECONTAINER "container"]

Specifies the container on the source Microsoft Exchange server where you want to create objects. Use this command in combination with the DIRSYNC option. Enter the distinguished name for the specified container. A distinguished name in the Active Directory uses the following format:

OU=organizationalunit,DC=mydomain,DC=com

If you do not specify a container, new objects are created in the default container. The default Active Directory container is Users.

[/TARGETCONTAINER "container"]

Specifies the container on the target Microsoft Exchange server where you want to create objects. Use this command in combination with the DIRSYNC option. Enter the distinguished name for the specified container. A distinguished name in the Active Directory uses the following format:

OU=organizationalunit,DC=mydomain,DC=com

If you do not specify a container, new objects are created in the default container. The default Active Directory container is Users. Microsoft Windows does not allow contacts in the BuiltIn container. Do not specify the BuiltIn container as your target container for directory synchronization.

[/MERGEMETHOD mergetype]

Specifies whether NetIQ Exchange Migrator mail-enables target accounts that share a common property with a source account when synchronizing directories. Use this command in combination with the DIRSYNC option.

NONE

Does not merge source and target accounts.

## SID HISTORY

Mail-enables accounts that share the same SID History. To synchronize accounts based on SID History, your target Microsoft Exchange organization must be running on Active Directory in native mode.

## SAM accountNAME

Mail-enables accounts that share the same sAMAccountName attribute. If the specified attribute of the source object is not shared with a target object, NetIQ Exchange Migrator creates a new contact on the target for that source object. NetIQ Exchange Migrator does not synchronize accounts when the corresponding target account is mail-enabled or mailbox-enabled.

## [/VERBOSE]

Prints information about each object handled by the `DIRSYNC` option. EMCLI provides the distinguished name for each object handled and the outcome of the attempted task. All information prints to the screen unless directed to a text file.

## [/VERYVERBOSE]

Prints information about each object handled by the `DIRSYNC` option as well as diagnostic logging information. Diagnostic information may be requested by technical support to help resolve problems. All information prints to the screen unless directed to a text file.

## [/CLEARTABLES]

Ignores information about objects created by the `DIRSYNC` option that is stored in the NetIQ Exchange Migrator database. Using this option may significantly decrease performance of EMCLI.

## [/disablevalidation]

Disables the validation of the project specified when using the `MLISTMIG`, `MMIG`, or `MSYNC` options. By default, NetIQ Exchange Migrator validates the project each time it is called.

## [/Incremental]

Synchronizes only mailbox changes that occurred since the last migration or the last synchronization. Use this parameter with the `MSYNC` option.

## [/PermissionsOnly]

Synchronizes only mailbox permissions. Use this parameter with the `MSYNC` option.

## [/RemoveDeleted]

Removes any mailbox items that were deleted on the source mailbox, so they are not transferred to the target mailbox during synchronization. Use this parameter with the `MSYNC` option.

---

### Note

If you do not use any of the `/Incremental`, `/PermissionsOnly`, and `/RemoveDeleted` parameters, NetIQ Exchange Migrator performs a full mailbox synchronization. The equivalent functionality in the console would be to select the **Full mailbox synchronization** option without selecting the **Delete mailbox messages deleted on source** option.

---

## Example 1

To perform a bi-directional directory synchronization on **My Project** and output the results to **dai lsync.txt**:

```
EMCLI DIRSYNC /PROJECT "my project" /DIRECTION TWOWAY /MERGEMETHOD SAM account name  
/TARGETCONTAINER "ou=EastCoast,dc=MyCompany,dc=com" /VERYVERBOSE >dai lsync.txt
```

## Example 2

To validate the **My Project** project:

```
EMCLI VALIDATE /PROJECT "my project"
```

## Example 3

To migrate the mailboxes, distribution lists, and contacts included in **My Project** for five hours:

```
EMCLI MMIG /PROJECT "my project" /TIME 5
```

## Example 4

To synchronize mailboxes in **My Project** for four hours:

```
EMCLI MSYNC /PROJECT "my project" /TIME 4
```

## Example 5

You can combine the EMCLI commands in a batch file and run the batch file at a later time using the Microsoft Windows Schedule service. Microsoft Windows completes each command in the batch file starting at the top of the list before executing the next command. In the following batch file, **mymigration.bat**, the EMCLI commands specify to perform the following commands on the **My Project** project:

- Migrate all mail objects
- Synchronize all mail objects
- Synchronize all public folder objects
- Synchronize the directories

To run a batch file at a scheduled time:

```
rem Example Batch file mymigration.bat  
EMCLI MMIG /PROJECT "my project" /TIME 5  
EMCLI MSYNC /PROJECT "my project" /TIME 4  
EMCLI PFSYNC /PROJECT "my project" /TIME 3  
EMCLI DIRSYNC /PROJECT "my project" /DIRECTION TWOWAY >dai lsync.txt
```

# Using the EMProfileUpdate Utility

The NetIQ Exchange Migrator EMProfileUpdate utility allows you to easily update migrated client profiles. You can implement this utility individually on client computers or through scripts.

The EMProfileUpdate utility consists of three files:

- `ProfileUpdateLauncher.exe` - This file is a wrapper that includes the `EMProfileUpdate.exe` and `EMProfileUpdate64.exe` files. The `ProfileUpdateLauncher.exe` file determines whether client computers are running a 32- or 64-bit version of Outlook and launches the appropriate executable.
- `EMProfileUpdate.exe`
- `EMProfileUpdate64.exe`

NetIQ Exchange Migrator supports mailbox profile updates for users running the following email clients:

- Microsoft Outlook 2010 (32- and 64-bit)
- Microsoft Outlook 2007
- Microsoft Outlook 2003

---

## Note

When you run the EMProfileUpdate utility for Outlook 2010 mailboxes, NetIQ Exchange Migrator creates a new OST file instead of keeping the original OST file. Due to changes in Outlook 2010, NetIQ Exchange Migrator cannot reuse the existing OST file on Outlook 2010 installations. OST file retention works as expected for Outlook 2007 and earlier versions, but NetIQ Exchange Migrator always resets the OST for Outlook 2010 mailboxes, regardless of command line parameters.

---

## EMProfileUpdate Prerequisites

Before you use the EMProfileUpdate utility, complete the following processes:

- Migrate your Microsoft Exchange mailboxes using NetIQ Exchange Migrator
- Use NetIQ Exchange Migrator to export a list of migrated mailboxes to use as input to the EMProfileUpdate utility
- Ensure the users associated with the migrated mailboxes have permissions to modify their Microsoft Exchange profiles

## EMProfileUpdate Syntax and Options

The following section provides syntax and supported options for the EMProfileUpdate utility.

```
EMProfileUpdate Filename [-RunOutlook| -RunOutlookAll] [OutlookOp "options"] [-KeepOutlookOpen| -CloseOutlookAfterDelay seconds] [-PFKey key_value] [-ResetOST] [-Help| -?]
```

---

### Note

If you do not know whether client computers are running a 32- or 64-bit version of Outlook, you can replace EMProfileUpdate with ProfileUpdateLauncher. ProfileUpdateLauncher can receive the EMProfileUpdate parameters, redirect them to the appropriate executable, and run the command. So, if the client computer is running the 64-bit version of Outlook, the parameters are sent to EMProfileUpdate64.exe and the command is executed.

---

### Filename

Specifies the full path to the mailbox list file. By default, this file is named EMAMappings.tab.

### -RunOutlook| -RunOutlookAll

Specifies whether to start Microsoft Outlook for each mailbox with an updated client profile (RunOutlook) or to start Microsoft Outlook for each client profile (RunOutlookAll). This switch is optional.

### -OutlookOp "*options*"

Specifies command-line options you want to pass to Microsoft Outlook. When specifying more than one, ensure the list of options is enclosed in quotation marks (""). This switch requires the use of either -RunOutlook or -RunOutlookAll.

### -KeepOutlookOpen| -CloseOutlookAfterDelay *seconds*

Specifies whether to leave Microsoft Outlook open after updating or to close Microsoft Outlook after a specified number of seconds. The default value closes Microsoft Outlook after five seconds. This delay allows Microsoft Outlook to process any command-line arguments you specify. This switch requires the use of either RunOutlook or RunOutlookAll.

### -PFKey

Specifies the value of the 001e3001 profile property when the key is associated with the public folder server. The default value is Public Folders. On non-English Microsoft Outlook client computers, you must specify this property in the appropriate language. If the property contains international characters, replace those characters with their ASCII equivalent prefixed with an escape character (\). Since the ASCII code 214 is equivalent to the umlauted capital O (Ö), you can designate this property for a German public folder server as follows:

```
EMProfileUpdate Filename -PFKey "\214ffentliche Ordner"
```

This switch is optional.

### -ResetOST

Preserves the original OST path on the client computer. The EMProfileUpdate utility saves a copy of the existing OST file and Outlook rebuilds a new OST file from scratch the next time Outlook connects to the Microsoft Exchange server.

### -Help| -?

Displays the command-line help for the EMProfileUpdate utility.

## Exporting the Migrated Mailboxes List

NetIQ Exchange Migrator lets you export a file that contains the distinguished name (DN) of all the migrated mailboxes. EMProfileUpdate inputs this list to ensure the program modifies only the profiles of migrated mailboxes. Do not manually modify the exported file, as doing so can cause unexpected issues. If you plan to decommission your source server, ensure you export this list and store it. Your source server must be available to generate this mailbox listing.

To export a list of migrated mailboxes from the NetIQ Exchange Migrator console:

1. Start NetIQ Exchange Migrator.
2. In the left pane of the console, select a project.
3. On the Action menu, click **Export Migrated Objects**.
4. Save the file.

The file is named EMAppings.tab by default, but you can change this name. For ease of use, save the file in the folder where the ProfileUpdateLauncher.exe file is located. If you installed NetIQ Exchange Migrator in the default location, the ProfileUpdateLauncher.exe file is located in Program Files\NetIQ\Exchange Migrator.

## Running the EMProfileUpdate Utility

You can use EMProfileUpdate to redirect the local Microsoft Exchange profiles to the target Microsoft Exchange server.

To run the EMProfileUpdate utility:

1. Log on to the local computer with the user account associated with the migrated mailbox.
2. *If you have shared the folder containing ProfileUpdateLauncher.exe and the migrated mailboxes list*, enter the following command:

```
\\Computer\Share\ProfileUpdateLauncher.exe \\Computer\Share\ExportedListName.tab
```

3. *If ProfileUpdateLauncher.exe exists on the local computer*, navigate to the folder containing EMProfileUpdate and the migrated mailboxes list, and then type the following command:

```
ProfileUpdateLauncher.exe ExportedListName.tab
```

4. Run the command.

By default, this utility displays task results at the command prompt. You can specify that you want task results written to a file using the following command:

```
ProfileUpdateLauncher.exe ExportedListName.tab >filename.txt
```

---

### Note

When migrated users log on and start Microsoft Outlook, they may be prompted with a message that the location to which messages are delivered has changed. Any profile owner receiving this message should click **Yes**.

---

## Using a Logon Script to Run the EMProfileUpdate Utility

You can use a logon script to run EMProfileUpdate to minimize user interaction with the EMProfileUpdate utility.

**To use a logon script to run the EMProfileUpdate utility:**

1. Copy ProfileUpdateLauncher.exe and your exported mailbox list to the default NETLOGON share on the domain controller. On an Active Directory domain controller, the NETLOGON share corresponds to one of the following folders:

- \\WINTNT\SYSVOL\sysvol\DomainNamespace\scripts
- \\WINDOWS\SYSVOL\sysvol\DomainNamespace\scripts

2. Ensure the folder is shared and Everyone has Read permission.

3. Create a batch file modeled on the following example:

```
rem Example Logon Script Batch File
rem Replace DCName with the name of the domain controller
rem containing the share
rem Replace Share with the name of the share. For example,
rem replace Share with NETLOGON.
rem Replace ExpListName with the name of the exported
rem mailbox list
\\DCName\Share\ProfileUpdateLauncher.exe \\DCName\Share\ExpListName.tab
```

4. Save the batch file.

For more information about creating logon scripts, see the Microsoft Windows Help.

---

### Note

When migrated users log on and start Microsoft Outlook, they may be prompted that the location to which messages are delivered has changed. Any profile owner receiving this message should click **Yes**.

---

## Displaying Migrated Contacts in the Target Microsoft Outlook Address Book

The EMProfileUpdate utility updates migrated mailbox settings, but does not automatically update contacts in the target Microsoft Outlook address book. Manually update migrated contacts on the computer with the migrated mailbox profile to correctly display contacts in the target Microsoft Outlook address book.

**To update contacts in the target Microsoft Outlook address book:**

1. On the Start menu, click **Settings > Control Panel > Mail**.
2. Click **Show Profiles**.
3. Click the profile that contains the migrated contacts.
4. Click **Properties**.
5. Click **Outlook Address Book**.
6. Click **Remove**.
7. Click **OK**.
8. Click **Close**.
9. Open Microsoft Outlook.

10. Click the **Contacts** subfolder in the Outlook folder.
11. On the File menu, click **Folder > Properties**.
12. Click the Outlook Address Book tab and select **Show this folder as an email address book**.

## Using DBManager

The DBManager utility walks you through directing a NetIQ Exchange Migrator console at a remote NetIQ Exchange Migrator database. Use this utility when implementing more than one NetIQ Exchange Migrator console. The NetIQ Exchange Migrator database must be the same version as the console utilizing it. NetIQ Exchange Migrator is not designed to use more than one NetIQ Exchange Migrator database.

### To run the DBManager utility:

1. Log on with an administrator account to the computer on which you installed NetIQ Exchange Migrator without a database or with a database you do not want to use.
2. Run the `DBManager.exe` file from the installation folder. By default, the installation folder is `\Program Files\Exchange Migrator`.
3. Complete the wizard to direct NetIQ Exchange Migrator to use the appropriate database. Repeat this procedure for each console computer using the remote database.

## The NetIQ Coexistence Utility

The NetIQ Coexistence Utility allows you to synchronize calendar free/busy information to allow migrated users to schedule meetings with non-migrated users. For more information, see the *NetIQ Coexistence Utility Release Notes*.

## The NetIQ SharePoint Migration Utility

The NetIQ SharePoint Migration Utility allows you to migrate Exchange public folders to SharePoint sites. For more information, see the *Migrating Microsoft Exchange Public Folders to SharePoint Technical Reference*.



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## Appendix C

# Ports Used by NetIQ Exchange Migrator

NetIQ Exchange Migrator requires the following ports to be open:

Port	Protocol	Service
88	UDP	Kerberos
128 - 139	TCP	Server Message Block (SMB) and NetBIOS
135	TCP	RPC
135	TCP	MAPI
389 by default	TCP	LDAP
464	UDP	Kerberos password
3268	TCP	Global Catalog
1433	TCP	Microsoft SQL Server

As a security measure, NetIQ Corporation strongly recommends that if you open the RPC ports on your firewall, you do so only on a controlled basis. Allow communication over those ports only between the hosts involved in the migration and no others.

