

Quest® Migrator for Notes to Exchange 4.16.0
Scenarios Guide



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Legend

 **CAUTION:** A CAUTION icon indicates potential damage to hardware or loss of data if instructions are not followed.

 **IMPORTANT NOTE, NOTE, TIP, MOBILE, or VIDEO:** An information icon indicates supporting information.

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About this Scenarios Guide

This *Scenarios Guide* was developed to help you prepare for your organization's migration from Notes to Microsoft Exchange, using Quest Migrator for Notes to Exchange. These pages will familiarize you with Migrator for Notes to Exchange component tools, explain how those tools are typically used within the broader context of an overall migration project, and provide step-by-step instructions for how to prepare for migration and then how to migrate the data in various scenarios.

This *Guide* is intended for network administrators, consultants, analysts, and any other IT professionals who will use the Migrator for Notes to Exchange (MNE) tools or participate in planning for a migration project.

The primary contents of this guide are divided into these chapters:

- Chapter 1: Scenarios Overview
- Chapter 2: Migration to a Proprietary Exchange
- Chapter 3: Migration to Microsoft Office 365
- Chapter 4: Per-Desktop Migration

Quest recommends that administrators read chapter 1 completely, then browse chapter 2 or 3 (depending on the target type) to orient themselves to the various processes and how they vary from one scenario to another. If you intend to migrate any portion of user data using the MNE per-desktop SSDM tool, you should also read chapter 4. The process instructions in chapter 2 or 3 may then serve as a step-by-step checklist when actually performing the tasks they describe.

About the Migrator for Notes to Exchange documentation suite

This *Scenarios Guide* is one of several documents that explain various aspects of the Migrator for Notes to Exchange (MNE) product. The complete documentation suite includes:

- **Quick-Start Guide:** An orientation to Migrator for Notes to Exchange's basic purposes, components and features, with a case study to illustrate typical usage. Also includes instructions for downloading and installing the software.
- **Pre-Migration Planning Guide:** A checklist of strategic and tactical issues that an organization must consider and accommodate before beginning a migration project. An appendix also documents known limitations of the migration process.
- **Scenarios Guide:** Descriptions of the most common migration scenarios—migrating to different target environments and for an array of other variables and preferences—with process instructions and flow charts that explain how to use Migrator for Notes to Exchange tools and features in each scenario.
- **Administration Guide:** Operational details, application notes and screen-by-screen field notes for the administrator components of Migrator for Notes to Exchange.

- **Self-Service Desktop Migrator User Guide:** Operating instructions, application notes and screen-by-screen field notes for the Self-Service Desktop Migrator (SSDM) component of Migrator for Notes to Exchange. The *SSDM User Guide* is provided as a separate PDF document so that an administrator can distribute it to any end users who will run the per-desktop program.
- **Program Parameters Reference:** A listing of all the Migrator for Notes to Exchange program parameters (and their valid values) in the Task Parameters and Global Defaults, and how to use them to control various program behaviors.
- **Online Help:** Context-sensitive field definitions and application notes for all the Migrator for Notes to Exchange wizards and other component applications.

All these documents, except the *SSDM User Guide*, are intended for network administrators, consultants, analysts, and any other IT professionals who will install the product, use its admin tools, or contribute to migration project planning. Generally speaking, the *Pre-Migration Planning Guide* and *Scenarios Guide* present a more conceptual, theoretical view of the product, while the *Administration Guide* provides the hands-on, screen-by-screen descriptions and field notes. The *SSDM User Guide* is intended for end users or administrators who will use the Self-Service Desktop Migrator component.

NOTE: Quest recommends that all administrators read all of the *Quick-Start Guide* and *Pre-Migration Planning Guide* (in that order), and then the first chapter of the *Scenarios Guide*. You can use that information to prepare a detailed written Migration Plan before attempting the actual migration process. When you are ready to begin the actual migration process, you may then refer as needed to the process instructions and notes in the *Scenarios Guide*, and the operational details in the *Administration Guide*.

Other sources of information

Visit our Quest online communities

The *Quest Communities* web site is an interactive online community dedicated to issues relating to:

- Migration of email, identity and applications to the Windows Exchange platform, either on-premises or hosted Exchange platforms like Office 365—including migrations from Exchange, GroupWise, and Notes.
- Active Directory migrations.
- Migrations from Notes application and Exchange public folders to Sharepoint.
- Coexistence strategies and tools.

The community is designed to foster collaboration between Quest Migration experts and users. It's a place where you can:

- Learn about product releases and betas before anyone else.
- Get access to Quest product leaders and subject matter experts on migration and coexistence.

You can browse around the forums and the library, but to take full advantage of the community, post new threads, respond to messages from others, and rate our documents and downloads, you must *Join* the community. If you already have a Quest account or are a member of another Quest community, simply *Sign in*. The *Sign in* and *Join* features are both available from links near the top-right corner of the page at the [Quest Communities](#) web site.

Scenarios overview

- [About Migrator for Notes to Exchange scenarios and this guide](#)
- [Migration to proprietary Exchange](#)
- [Migration to Microsoft Office 365](#)
- [Offline migration](#)
- [Phased \(staged\) migration](#)
- [Silent mode options in per-desktop migrations](#)

About Migrator for Notes to Exchange scenarios and this guide

This *Guide* provides process instructions that show how Migrator for Notes to Exchange (MNE) is used within the broader context of a migration project. The processes described here include steps that are performed outside the scope of Migrator for Notes to Exchange—within Notes and Exchange, and with coexistence tools like Quest Coexistence Manager for Notes (CMN)—because the sequence and interplay among the solutions and environments are important. Flow charts illustrate the correct sequences of steps for all common scenarios.

Virtually all migrations follow a similar *basic* process, with variations to accommodate each organization's circumstances and needs—what we collectively call a *scenario*. Most variations to the process result from:

- **Migration Destination** (the Exchange target type):
 - **Proprietary Exchange network**

A *proprietary* Exchange environment is one whose hardware and software are wholly under the control of the migrating organization. Ordinarily this is a local Exchange network—on the same premises as the Notes source, or at least near enough to use high-performance network cables. But a proprietary Exchange target may also reside in a different location from the Notes source.
 - **Hosted Exchange platform ("the cloud")**

A *hosted* Exchange platform is one in which the hardware and software are owned and controlled by a third party. The hosting entity then sells, as a service, access to disk space and the Exchange software features. This service model is also known as "cloud" computing. The overwhelming majority of migrations to a hosted Exchange are to Microsoft Office 365.
- **Pre-Migration State of Existing Local Active Directory (if any):** Part of the migration process depends on whether your organization already has a local Active Directory running for login and security purposes and, if so, the state of any objects already provisioned there.
 - **If migrating to a proprietary Exchange:** Do you already have an Active Directory up and running? If an existing AD has already been provisioned, are its objects already mail-enabled, mailbox-enabled, or neither?
 - **If migrating to Office 365:** Will you use a proprietary local Active Directory to provision the hosted environment and, if so, will you keep the local AD active after the migration? This method of provisioning permits *single sign-on*, also called *identity federation*, so users can access Office 365 services with the same corporate credentials (user name and password) they use for the local

Active Directory. Alternatively, you could provision Office 365 without a local AD, by using Migrator for Notes to Exchange to provision Office 365 directly from the Notes/Domino source.

Different combinations of target types and states of an existing local AD (if any) produce an array of migration scenarios. This *Scenarios Guide* describes all of these combinations, and summarizes the migration process for each:

- **Migration to Proprietary Exchange:**
 - No pre-existing Active Directory (or no AD objects yet exist).
 - AD objects exist in pre-existing Active Directory.
- **Migration to Office 365:**
 - Provisioning Office 365 from a local Active Directory.
 - Provisioning Office 365 directly from Notes/Domino source.

We also describe three special-case scenarios, each of which would occur in combination with one of the above-listed scenarios:

- **Offline Migration:** A migration strategy in which Notes source data that was previously extracted from Notes is migrated directly to the Exchange target. This option supports scenarios where it is impossible or impractical for the source and target servers to both be connected to Migrator for Notes to Exchange at the same time, so the data cannot be copied directly from the source to the target.
- **Phased (Staged) Migration Options:** A migration strategy in which all but the most recent source data is "pre-migrated" to Exchange while all users remain active in Notes, so that the remaining Notes data (a much smaller volume) can be migrated much faster—often so that all users can be migrated together in a final "cutover" migration. Users continue to receive and send mail and manage their calendars in Notes throughout the transition period, while their older data is migrated to Exchange. If the final cutover can be accomplished in a single day or weekend, this strategy can eliminate the need for email, calendar and free/busy coexistence.
- **Silent Mode Options:** A strategy to configure Migrator for Notes to Exchange's SSDM (the per-desktop migration app) to hide some or all of its screens, and take all of its required entry values from values stored in its pre-configured .ini file, thus eliminating or minimizing any need for interaction with the end user.

Chapters 2 and 3 of this *Guide* provide step-by-step process instructions that cover all of these scenarios. Since all migrations follow the same *basic* process, with just a few variations for particular needs and preferences, we can generalize to present just two linear procedures that are suitable for nearly all scenarios: one for migration to a proprietary Exchange (described in chapter 2 of this *Guide*), and the other for migration to Office 365 (chapter 3).

Of course some steps in both primary scenarios are optional or conditional, depending on local variations in needs and preferences, and these are clearly marked within the instructions by this "If" icon and note:



Conditional Step: Conditional steps appear within the process instructions (in chapters 2 and 3) marked with this "If" branching-arrows icon.

Chapter 4 explains the admin activities and considerations associated with per-desktop migrations, which may occur with or without batch migrations, or may not be used at all—depending on your needs.

The Migrator for Notes to Exchange pre-migration preparations and batch-migration processes are illustrated in two flow charts for each primary target type: proprietary and hosted (Office 365). The flow charts are presented in this first chapter as introductory overviews to the processes, and appear again as references with the process instructions in chapters 2 and 3.

The process instructions in this *Guide* are also meant to serve as summary checklists, so they do *not* include the operational details and screen-by-screen field notes for Migrator for Notes to Exchange component applications. Instead, many of the steps in these procedures refer to those details within particular chapters and sections of the Migrator for Notes to Exchange *Administration Guide*.

Migration to proprietary Exchange

For our purposes, a *proprietary* Exchange environment is one whose hardware and software are wholly under the control of the migrating organization. A proprietary Exchange server is commonly in the same location as the source Notes environment, but may reside at another location.

When migrating to a proprietary Exchange, some steps in the procedures depend on the state of any objects that may already exist in an existing Active Directory. An organization may have an existing Active Directory for login and security purposes. When user accounts already exist in Active Directory, Migrator for Notes to Exchange can use these objects to preserve the same credentials and security within the environment. AD objects must also be mail-enabled and mailbox-enabled before data can be migrated for those users. (An object is said to be *mail-enabled* when Exchange can accept a message for it—because the object record contains a forwarding address to which mail can be routed. An object is said to be *mailbox-enabled* only when it has an active mailbox in Exchange.)

If your target AD has not yet been installed and configured, or if your migrating Notes users have not yet been provisioned into the target AD, our pre-migration preparations include optional steps to install and configure the target Exchange environment, and provision and mail-enable AD objects.

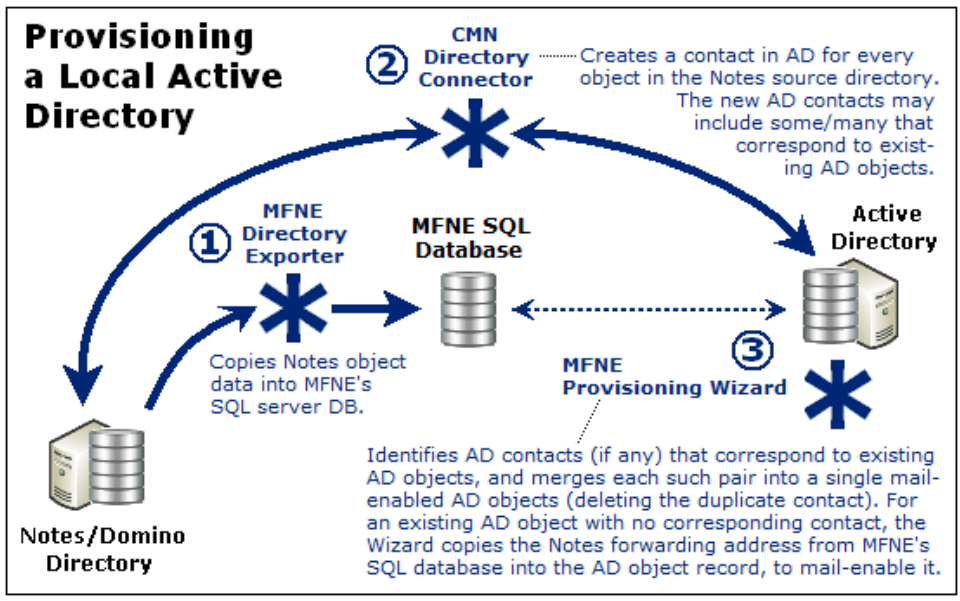
i **NOTE:** Exchange cannot send a free/busy query to an external server for a user who has an Exchange mailbox. Exchange can direct such queries only to the users' Exchange mailboxes, so free/busy queries for not-yet-migrated Notes users will work only if the users do not yet have Exchange mailboxes.

Since many organizations use Coexistence Manager for Notes Free/Busy Connector during the transition period, our pre-migration preparations provision mail-enabled objects into Active Directory without mailboxes. Objects must be mail-enabled for mail-forwarding, but not before, so we do not create users' mailboxes until just prior to their migration—in the batch migration process (per user batch). This mitigates the effects of the Exchange free/busy limitation by limiting its duration (the time between mailbox creation and migration).

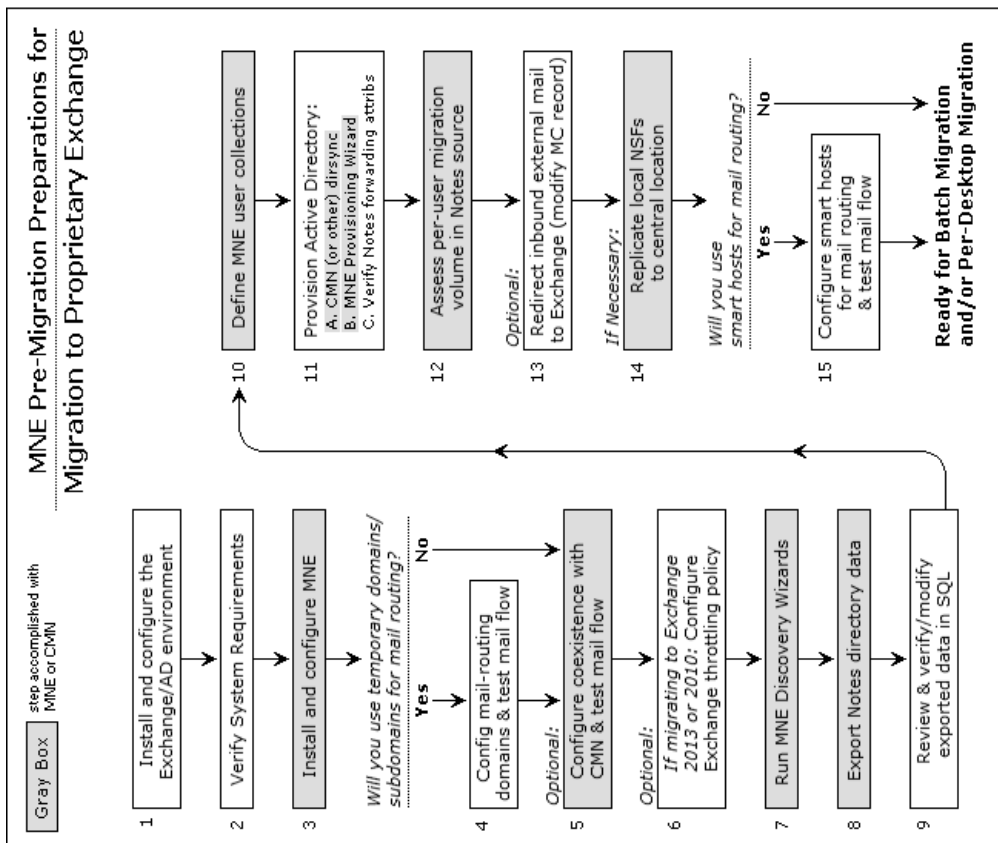
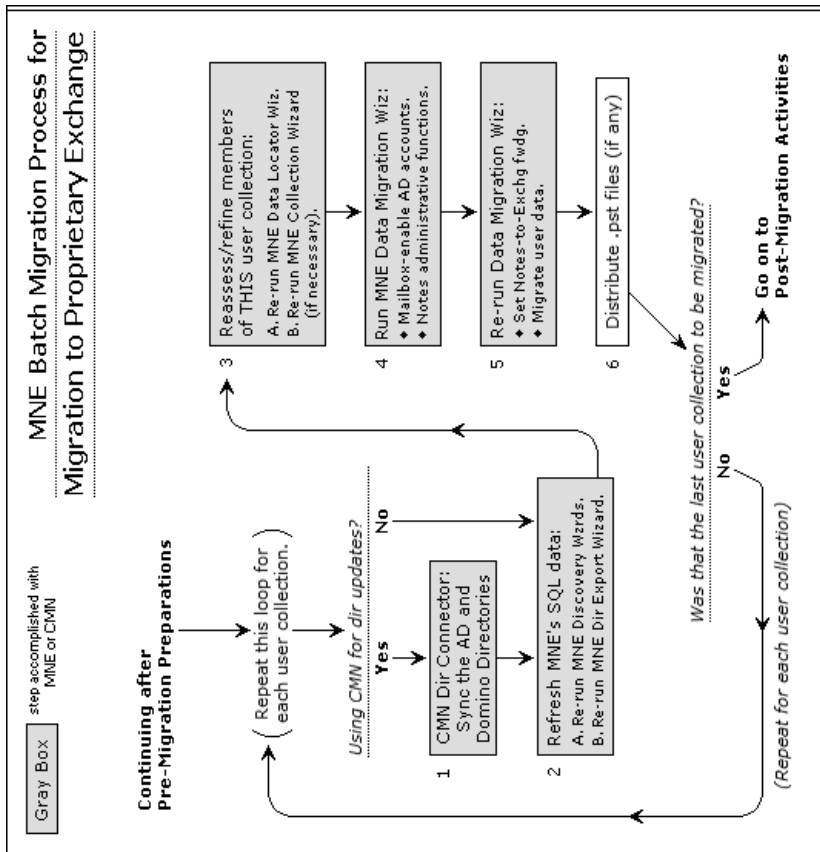
If mailboxes already exist in the target Exchange, free/busy queries to not-yet-migrated Notes users will not work until those users are migrated to Exchange. In that case several of the optional pre-migration steps can be skipped, but other configuration and administrative tasks are still required before the actual migration can begin.

All scenarios include optional steps for coexistence, as described later. And the pre-migration preparations include steps to verify all objects' target/forwarding addresses, to ensure correct mail routing.

In these scenarios, an admin runs Migrator for Notes to Exchange component applications using admin accounts configured with the necessary permissions to access the directories and user data in both the source and the target environments.

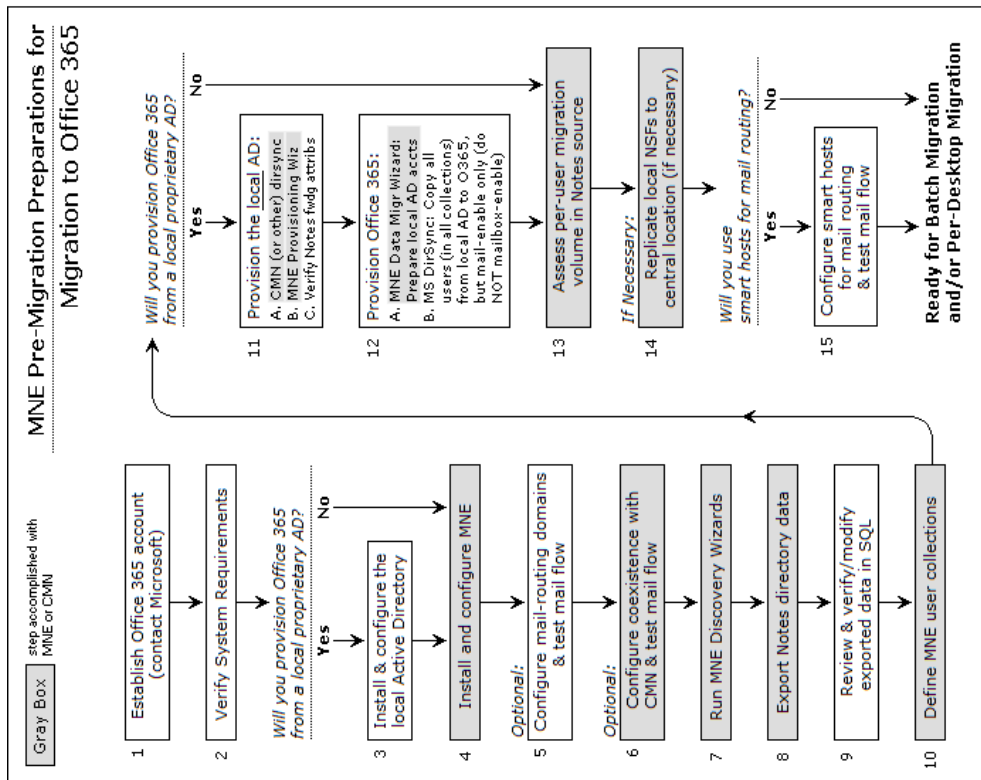
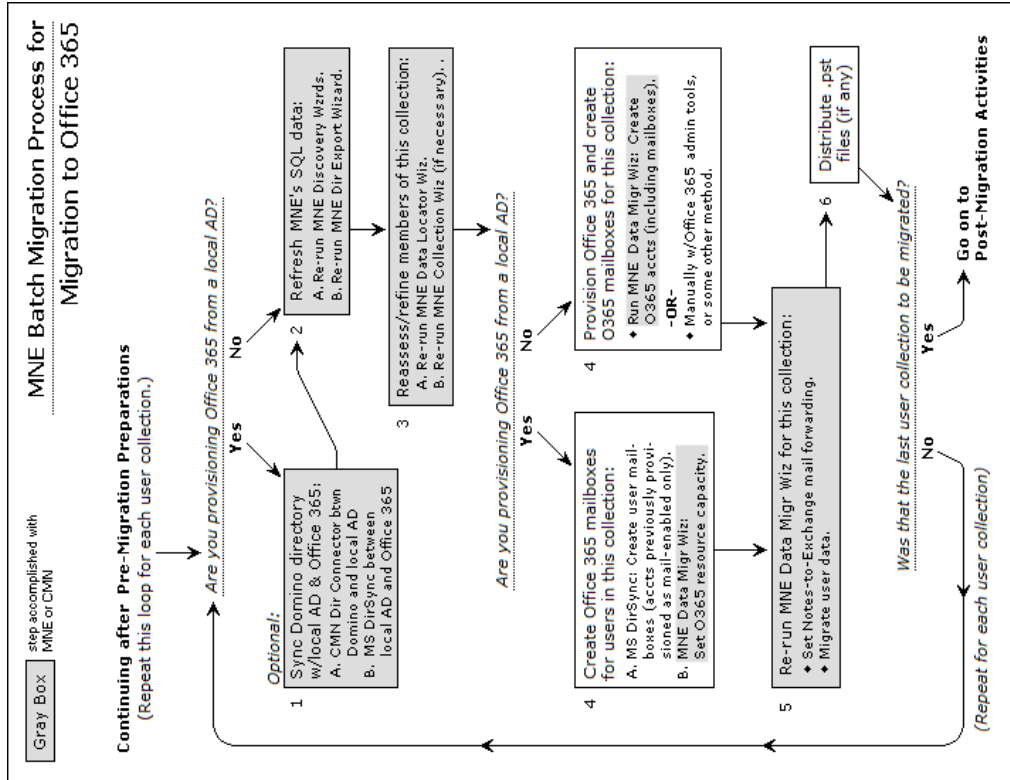


Step-by-step instructions and more detailed notes for migrations to proprietary Exchange targets appear in chapter 2.



Migration to Microsoft Office 365

Migrator for Notes to Exchange can migrate to hosted Exchange services ("the cloud"), typically to Microsoft Office 365. Migration to Office 365 is similar to on-premises migrations, but there are enough differences that we document the processes separately, in separate chapters of this *Scenarios Guide* (chapters 2 and 3).



The account permissions necessary for migration to Office 365 are different from those needed when migrating to a proprietary Exchange, since the hosted services are shared resources controlled by an external entity (Microsoft). Access to either target type is set at the mailbox level through Remote PowerShell, as described in the Migrator for Notes to Exchange *Quick-Start Guide* and *Pre-Migration Planning Guide* (see the *System Requirements* section in either book).

Throttling and throughput

Office 365 introduced throttling on user connections, which impacts migration performance. The throttling is a per-user limitation that reduces throughput after more than two connections by a single user (including the *<MigrationAdmin>* user). With previous versions of Exchange Online, migration throughputs of 3-5GB/hr per machine were common. But the Office 365 throttling reduces typical throughput to 500MB/hr or less per machine.

Quest therefore recommends that you use multiple migration machines (or virtual machines) running in parallel to achieve the desired throughput when migrating to Office 365. Use a separate unique *<MigrationAdmin>* account for each machine, to bypass the Office 365 throttling. Also, each migration machine should be configured with fewer threads (2–4) to optimize throughput.

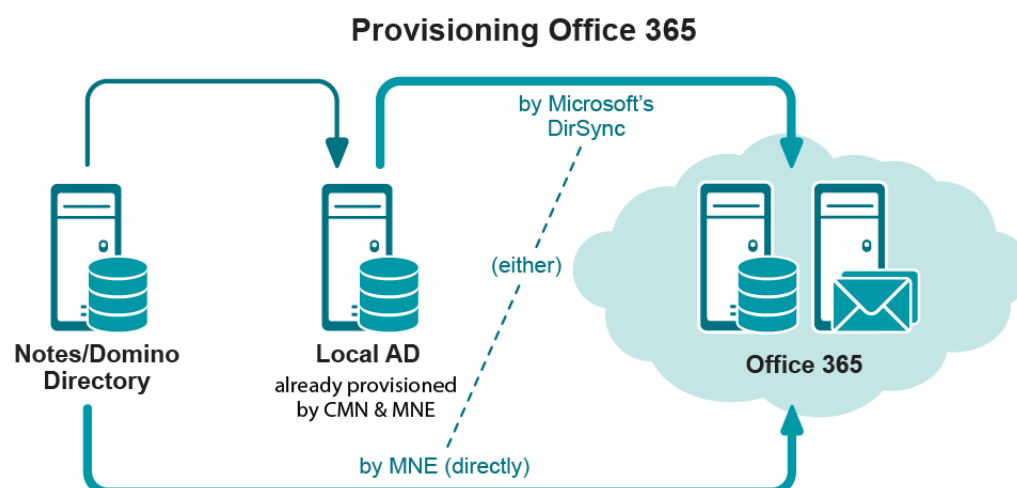
At this writing, Quest is working directly with Microsoft to test modifications to Office 365 throttling policies and their impact on migration throughput. It may soon be possible to modify the throttling policies to improve migration throughput. However, multiple migration machines with unique migration accounts may still be desirable and/or necessary for more efficient migration to Office 365.

Provisioning and mailbox creation

Microsoft AD synchronization tool can provision Office 365 with object data from a local AD by synchronizing the two directories. This provisioning method permits what Microsoft calls *single sign-on*, or *identity federation*, so users can access Office 365 services with the same corporate credentials (user name and password) they use for your local AD.

If you will provision Office 365 by Microsoft AD Sync tool from a local AD, you can provision the local AD the same as for a proprietary Exchange target—using Migrator for Notes to Exchange features (with or without Quest CMN). Microsoft AD Sync tool can then provision the hosted AD from the local AD.

Migrator for Notes to Exchange can also manage mail routing throughout the project, and perform several server-admin tasks commonly associated with migrations.



If you will not have a local AD, you can use Migrator for Notes to Exchange to provision Office 365 directly from the Notes source, and create the hosted mailboxes. Otherwise, you could provision a hosted AD manually by Microsoft Office 365 admin portal. In that case, many admins use scripting to automate some portions of the process.

i **NOTE:** Exchange-to-Notes mail forwarding requires mail-enabled objects in Office 365. However, an Exchange-to-Notes free/busy query (an Office 365 user seeking free/busy info for a Notes user) requires that the Notes user **not** have an Exchange mailbox. (Exchange cannot send a free/busy query to an external server for a user who already has an Exchange mailbox. Exchange can send such queries only to its own mailboxes.) Therefore, to have both Exchange-to-Notes mail routing and Exchange-to-Notes free/busy queries during the transition period, you must:

- Provision *all* Notes users into Office 365 as mail-enabled objects, but *without* mailboxes, before the first users are migrated, **and**
- Do **not** create users' mailboxes until just prior to their migration (per user collection).

If you cannot provision objects and create mailboxes separately, then one or the other of those two features will be sacrificed. Microsoft's AD Sync tool can provision mail-enabled objects from a local AD into Office 365 *without* simultaneously creating mailboxes, but other provisioning methods create Office 365 mailboxes at the same time they create the mail-enabled user objects.

Therefore, provisioning Office 365 by any method *other than* by the Microsoft AD Sync tool (from a local AD) makes it impossible to have both Exchange-to-Notes mail forwarding and Exchange-to-Notes free/busy queries during the transition period.

Of course this Exchange free/busy limitation is irrelevant if you do not intend to configure any free/busy coexistence. In that case, simply provision all users (in all collections) into the hosted AD in the *Pre-Migration Preparations*, to preserve Exchange-to-Notes mail-forwarding.

Mail routing

For most scenarios, inbound external (Internet) mail is not redirected to Office 365 until the last user has been migrated. We leave the MX record pointing to Notes throughout the entire transition period, and Migrator for Notes to Exchange can set Notes-to-Exchange forwarding for users as their collections are migrated. When the last user in the last collection is migrated, we update the MX record to redirect external inbound mail to the new hosted mailboxes.

If you want to keep your Notes environment running for a time after the migration, you should leave the Notes-to-Exchange forwarding in place, so any internal Notes mail is routed to the new hosted Exchange mailboxes.

Since inbound external mail is not routed to Office 365 until after all users have been migrated, Exchange-to-Notes forwarding is necessary only for internal mail from already-migrated Exchange users to not-yet-migrated Notes users. Mail routing in the Exchange-to-Notes direction requires mail-enabled objects in the hosted AD, but Exchange-to-Notes free/busy queries will not work if the Notes user already has an Exchange mailbox. (See the *Important* note in the preceding section for more information about this.)

If your organization wants both capabilities, you *must* use Microsoft AD Sync tool to provision Office 365 by directory synchronization from a local AD, because that is the only method that lets you create mail-enabled objects and hosted mailboxes at different times. That is, provisioning from a local AD lets you create mail-enabled objects for all users in the *Pre-Migration Preparations*, and then create mailboxes later, during the *Batch Migration Process*—per user collection, just prior to their migration.

If you are provisioning by some other method, you must choose whether you want Exchange-to-Notes mail routing or Exchange-to-Notes free/busy queries.

Directory coexistence with Office 365

A Microsoft-hosted Active Directory (for Office 365) imposes strict access restrictions that prevent direct directory coexistence between Notes and a hosted AD. With Quest Coexistence Manager for Notes, however, you could establish a "two-step" coexistence between Domino and Office 365 by this process:

- 1 Configure the CMN Directory Connector for bidirectional updates between Notes and a local, proprietary Active Directory.
- 2 Configure Microsoft AD Sync tool to synchronize the local AD with Office 365.

The combination of the two configures an effective directory coexistence between Domino and Office 365.

Mail, calendar and free/busy coexistence with Office 365

Office 365 introduces new options for coexistence and hybrid deployments. These include identity and calendar federation options that can be leveraged for Notes projects. Microsoft calendar federation requires a local Exchange server, but enables bi-directional free/busy lookups with Office 365 users.

Coexistence Manager for Notes can leverage this configuration to provide free/busy lookups with Notes users, although free/busy queries in the Exchange-to-Notes direction require that Notes users (awaiting migration) **not** already have an Exchange mailbox, which in turn requires that Office 365 be provisioned from a local AD by Microsoft AD Sync tool. (This is explained in more detail in the [Provisioning and mailbox creation](#) section above.)

CMN also enables direct email and calendar coexistence with Office 365.

Offline migration

Migrator for Notes to Exchange supports scenarios where it is impossible or impractical for the source and target servers to both be connected to Migrator for Notes to Exchange at the same time, so the data cannot be copied directly from the source to the target. An offline migration is a strategy in which Notes source data that was previously extracted from Notes is migrated directly to the Exchange target. An offline strategy can be valuable:

- if problematic bandwidth makes direct connection impractical (e.g., if the source and target servers are far apart—geographically and/or from a network perspective); or
- if the Domino environment is managed by a third party that does not allow admin access; or
- in a disaster scenario, where the Domino server is destroyed, but backup NSF files survive.

An offline migration can be accomplished by either of these two approaches:

- Notes source data is saved to replica or otherwise-disconnected NSFs, and the Migrator for Notes to Exchange Data Migration Wizard migrates from the NSF files directly to Exchange.
- The Data Migration Wizard migrates Notes source data to PST files (rather than directly to an online Exchange target), and the PST files are then imported into the Exchange target by some other application. The Quest Migration Manager for PSTs would be a good choice for this purpose.

The subtopics below provide specific requirements and guidance for these offline scenarios.

How to save Notes data to NSF or PST files

Remember in either case (NSFs or PSTs) that you will need:

- the main Notes Address Book containing all the objects you intend to migrate;
- all mail files and archives;
- all personal address books; and
- an admin ID file that can decrypt all of the above.

Saving Notes data to NSFs is a native Notes/Domino feature. If necessary, see the Notes documentation for more information.

Using Migrator for Notes to Exchange to migrate Notes data to PST files

- Configure the Migrator for Notes to Exchange Data Migration Wizard to migrate all data types to PST files either in the program UI, or by setting these parameters in the Task Parameters or Global Defaults:

```
[General]
PABDest=PST
ServerMailDest=PST
ArchiveDest=PST
```

- Migrator for Notes to Exchange (MNE) may try to query and set information in the Exchange environment as part of the migration conversions, but the attempt will return an error if there is no direct connection to an Exchange server. To disable these verifications, set *ACLs=0* in the [General] section of Task Parameters or Global Defaults.
- In the MNE Notes Migration Manager, on the *Notes Server Configuration* screen, ensure the **Always use these values** checkbox is *not* checked.

How to migrate from disconnected NSF or PSTs to Exchange

In the MNE Notes Migration Manager (before you run the Data Migration Wizard):

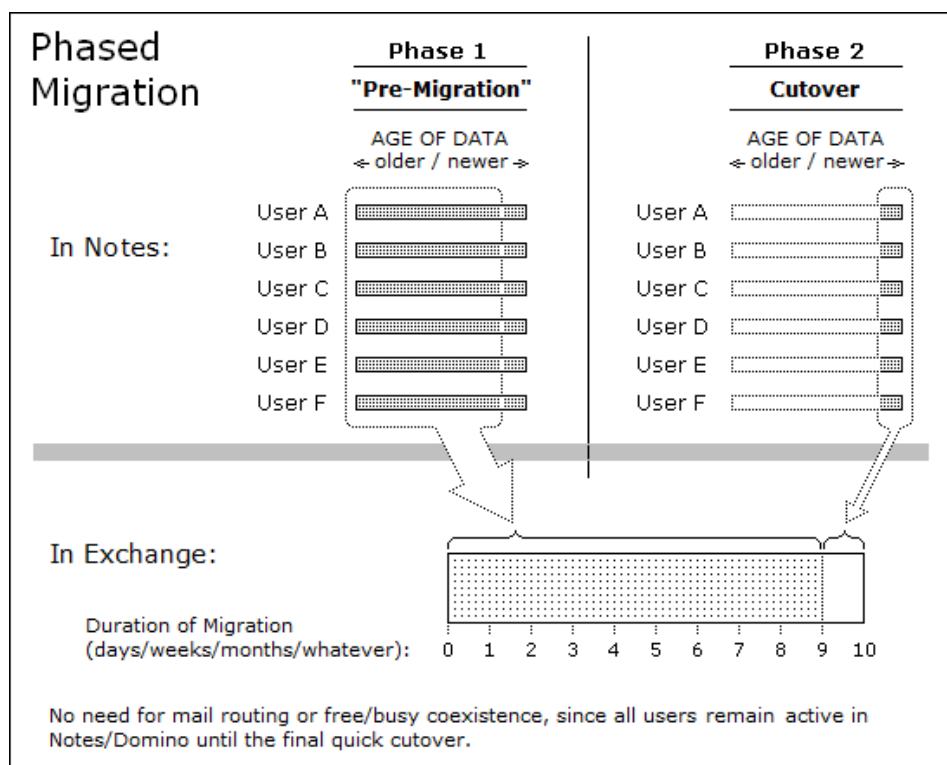
- 1 On the *Exchange Server Configuration* screen: Make sure the **Always use these values** checkbox is *not* checked.
- 2 Under *Discover Notes Information*:
 - On the *Find NABs* screen: Load and Enable the offline copy of the Notes Address Book. You will have to locate and load the offline copy manually (by the **Add NAB** button). (The **Find NABs** button will not work for this, since the Notes server is offline.)
 - On the *Find Domains* screen: Click **Find Internet Domains** to load the domains from the offline NAB.
 - On the *Export Notes Directory* screen: Click **Export Directory**, to launch the MNE Directory Export Wizard, and then:
 - Click the **Edit** button (to edit Task Parameters). In the configuration file, add the parameter *offline=1* to the bottom of the [Notes] section. Then save and close the file, and click **Next**.
 - On the *Specify Notes Login Information* screen, for **Domino Server** enter the name of the original Domino server from which the NAB files were copied. Then specify the offline migration ID file and password for the **User ID file** and **Password** fields.
 - Complete the Directory Export Wizard as normal.
- 3 Back in Notes Migration Manager, under *User Collections*, on the *Locate Notes Data Stores* screen: Click **Locate data stores** to launch the Notes Data Locator Wizard for the designated User collection, and then:
 - In the Notes Data Locator Wizard, on the *Select Notes Data Store Type(s) to Locate* screen: Select **Find new data stores and gather statistics**, and set the **Add/Replace** mode to *Replace data previously found...* Then select the data types you want to locate and click **Next**.
 - Make sure that **Scan file system directories that I specify** is selected, and click **Next**.
 - On the following pages, for each data type, browse to the directory where the items you want are located, and add them to the scan lists. **Note:** Make sure you specify the root folder, one folder above where the actual mail files are located. **Also:** The mail files must reside in a directory whose name matches the one from which the mail files came.
 - Complete the Notes Data Locator Wizard run.
- 4 Use the MNE Data Migration Wizard to migrate the NSF or PSTs into Exchange.

Phased (staged) migration

The term *phased migration* or *staged migration* refers to the process of pre-migrating or pre-populating data to target Exchange mailboxes prior to a final "cutover" migration. The staged migration may occur across the bandwidth or, in many cases, may be implemented in conjunction with the offline method described in the preceding section.

With this approach, a majority of the data can be pre-populated to the target mailboxes, which reduces the volume of data that must be transferred in the final cutover. Users remain active in Notes throughout the transition period,

receiving and sending mail and managing their calendars in Notes while their older data is migrated to Exchange. After the older data has been migrated, the much smaller volume of data remaining can be migrated comparatively quickly, so that larger numbers of users (or all of them) can be migrated together within a shorter window. Since Migrator for Notes to Exchange migrates *copies* of Notes data (does not delete the originals), the older data is still available to users in Notes throughout the transition period.



With a phased migration, it is typically beneficial to separate older mail from newer mail. This can be accomplished by either of two methods:

- **Replica method:** The agreements created to replicate NSF's can be configured to limit the data included in the replica NSF. With this approach, the data replicated can be limited to the subset of information you want to include in the pre-cutover phase.
- **Date filter method:** The Data Migration Wizard has integrated filtering options to specify date limits and ranges for messages to be migrated—to migrate only messages on or after (or before) a certain date, or within a particular range of dates.

Note that Migrator for Notes to Exchange also contains *Smart Remigration* technology, so that previously migrated items are detected and not duplicated if they are inadvertently migrated again.

End-user communication is critical in a phased migration to ensure the users understand the migration schedules. Depending on the migration timing and configuration, modifications and deletions made in Notes between the migration events may not be reflected in Exchange after the final migration.

In a phased-migration, by either method, the Exchange accounts and mailboxes must be created to accept the migrated data before end users actually start using their Exchange accounts. Therefore, you will run the Migration Wizard at least twice for each user group:

- **First Pass:** mailbox-enable user accounts on Exchange, set mail-forwarding rules on Exchange (to forward mail back to Notes until the users migrate), and migrate users' older data to the new server; and then ...
- **Second Pass:** reverse the mail routing (to forward mail from Notes to Exchange) and migrate the remaining data.

NOTE: Date filters are applied only to mail and calendar items, and not to users' contacts.

- **NOTE:** A phased migration requires the creation of Exchange mailboxes at the outset (for all Notes users, as part of your *Pre-Migration Preparations*), but this strategy also eliminates the need for free/busy coexistence, since all users (and their free-busy data) will remain in Notes throughout that period. Also, since all users will migrate together in the final cutover, a phased migration removes the need for Exchange-to-Notes mail forwarding in most cases.

Silent mode options in per-desktop migrations

The Migrator for Notes to Exchange Self-Service Desktop Migrator (SSDM) offers a Silent Mode configuration. This optional configuration is commonly used to minimize end user involvement when the SSDM is deployed, while maintaining the flexibility and other benefits of a distributed migration.

When Silent Mode is configured, the migration team configures the application in advance within the *notesdtapp.ini* file to determine what will migrate, the target for each migrated data type, and the filters and other configuration elements for the migration.

The SSDM Silent Mode options are fully described in chapter 4 of this *Scenarios Guide*.

Migration to a proprietary Exchange

- [Migration to a proprietary Exchange target](#)
- [Pre-migration preparations](#)
- [Batch migration process](#)
- [Post-migration activities](#)

Migration to a proprietary Exchange target

i | **NOTE:** The information in this chapter applies only if you are migrating to a proprietary Exchange target. If migrating to a hosted Exchange, skip this chapter and see chapter 3 ([Migration to Microsoft Office 365](#)) instead.

For our purposes, a *proprietary* Exchange environment is one whose hardware and software are wholly under the control of the migrating organization. A proprietary Exchange server typically is on the same premises as the Notes source, but could reside elsewhere.

Migration to a proprietary Exchange environment includes a few scenarios depending on whether the organization already has its Active Directory configured and, if so, whether any objects it may already contain are mail-enabled, or mailbox-enabled, or neither.

i | **NOTE:** A *mail-enabled* Active Directory object is one with a mail-address attribute for an address outside the Exchange domain, so AD can forward the object's mail to its external address. A *mailbox-enabled* object is one that has an Exchange mailbox. An AD object that is mail-enabled cannot receive mail in Exchange unless it is also mailbox-enabled; a mail-enabled AD object without a mailbox can only forward mail to an object's external forwarding address.

An organization may have an existing Active Directory already in place, for login and security purposes. When user accounts already exist in an established AD, Migrator for Notes to Exchange can use these objects to preserve the same credentials and security currently in use within the environment, but the objects must also be mail-enabled and mailbox-enabled before data for these users can be migrated.

Your coexistence strategy also figures into this category of scenarios. Most organizations' migration plans include some form of coexistence, which requires extra steps to configure and use.

This chapter provides process instructions and application notes for this group of traditional scenarios.


In these scenarios, Migrator for Notes to Exchange tools are run by admin accounts that are configured with the necessary permissions for access to directories and user data in both the source and target environments.

Pre-migration preparations

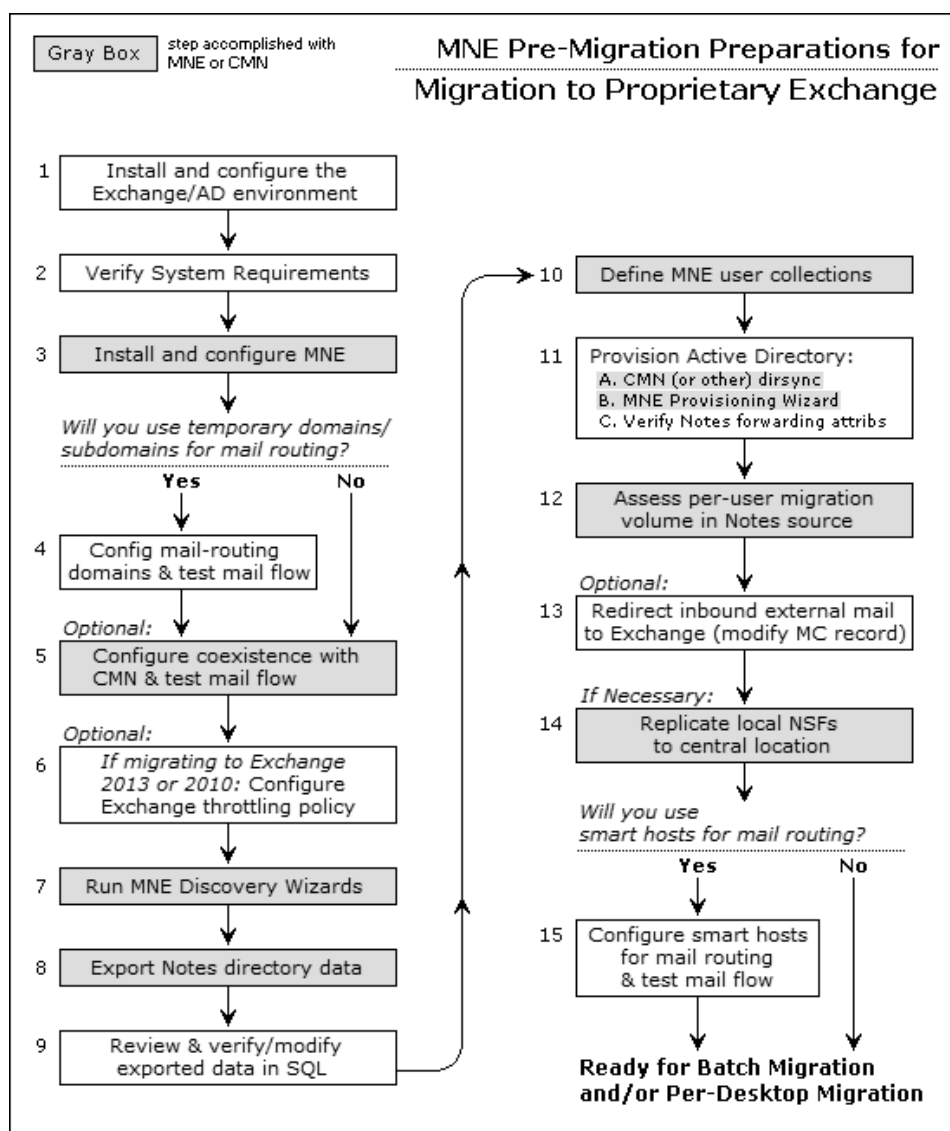
Any migration scenario requires preparation of the source and target environments, configuration of admin accounts, and preparation of the required software. Most also require configuration of a coexistence strategy. These pre-migration procedures can be time consuming because they include activities spanning multiple environments, configuring applications that will run concurrently to facilitate the migration, and other considerations.

These pre-migration preparations are typically performed only once, before the first users are migrated, and need not be repeated thereafter.

The flow chart below illustrates these necessary pre-migration preparations when migrating to a proprietary Exchange target.

If  **Conditional Step:** Steps that apply only in particular circumstances are clearly marked with this "If" branching-arrows icon and a note explaining when the step applies.

Note that the step numbers in the flow chart correspond to the step numbers in the process instructions below.



- i** | **NOTE:** This process does not create users' Exchange mailboxes until just prior to their migration (per user collection, in the [Batch migration process](#)), due to the Exchange free/busy limitation (explained in chapter 1, see the **Important** note under [Provisioning and mailbox creation](#) for Office 365. If you will not configure free/busy coexistence, you could create Exchange mailboxes earlier in the process, in these *Pre-Migration Preparations*, as long as you also set Exchange-to-Notes mail forwarding for not-yet-migrated Notes users.

Step 1: Install and configure your target Exchange environment

If you have not yet installed and configured your destination Exchange environment, do so now. Just install and configure the Exchange server and Active Directory at this time. Provisioning of Active Directory (if not already provisioned) will occur in a later step.

Step 2: Verify all system requirements are satisfied

All system requirements must be satisfied before you install Migrator for Notes to Exchange in the next step below. *System Requirements* are documented in the most recent RTM *Release Notes*. The admin accounts that will be used to run the Quest applications and access data and features in the Notes/Domino and Exchange/AD environments also will require particular permissions, as specified in the Migrator for Notes to Exchange *Pre-Migration Planning Guide* (see the topic *Configuration requirements and account permissions*). If these accounts do not already exist, create and configure them now.

Step 3: Install and configure the Migrator for Notes to Exchange software

The *Getting Started* section of the Migrator for Notes to Exchange *Quick-Start Guide* explains how to install Migrator for Notes to Exchange. The subtopics below describe particular configuration tasks that should be performed now, as part of the Migrator for Notes to Exchange configuration, before the first run of any Migrator for Notes to Exchange component application. (All but the first are optional or conditional.)

- i** | **NOTE:** The user account used to run the MNE console must belong to the Local Administrators group. You can add the user account to Domain Admins group as the Domain Admins group belongs to the Local Administrators group by default.

Consider also whether the MNE Self-Service Desktop Migrator (SSDM) will be used as part of your Migration Plan. If so, it should also be installed and configured.

- i** | **IMPORTANT:** Remember also that any antivirus software on the admin workstation must be configured to *not* scan the Quest program files directory or `%temp%` directory, or may simply be turned off prior to running any Quest admin application. (Although it may be restored after the program runs.) Migrator for Notes to Exchange program calls will not succeed if an antivirus scan tries to "clean" an Migrator for Notes to Exchange temporary file that it misinterprets as a threat.

Configure SQL server DB and Migrator for Notes to Exchange default settings

Most of the features and Wizards of Migrator for Notes to Exchange require access to information stored in a central database on the SQL server. Most also require access to the Notes server, Exchange server, Active Directory, and the shared directories that contain the Self-Service Desktop Migrator and its log and status files, and admin application log files. Migrator for Notes to Exchange features and Wizards therefore need to know the pertinent server names, locations, configuration options, access credentials and so forth for the various servers.

These *Default Settings* should be entered now into Notes Migration Manager (the Migrator for Notes to Exchange "console"), before other Migrator for Notes to Exchange features or the wizards are used, so that the information will be available to them and need not be entered again. If the information is not entered now, upon installation, the features and Wizards will prompt for the values as needed, and most of them will have to be entered more than once—reentered for each feature and Wizard that needs them.

i | **NOTE:** Quest therefore recommends you visit all five of the *Edit Default Settings* screens in Notes Migration Manager now to enter this information. The Notes Migration Manager is described in chapter 1 of the Migrator for Notes to Exchange *Administration Guide*.

Configure the Migrator for Notes to Exchange Task Scheduler for migration to on-premises Exchange

Migrator for Notes to Exchange tasks are defined by wizards, most of which also let you schedule tasks to run at particular times on particular days. The *Manage Scheduled Operations* screen in Notes Migration Manager lets you revise these task-execution schedules. But the wizards and Manage Scheduled Operations screen manage only the scheduling of task runs as these schedules are saved in the SQL database, and a "scheduled" task does not execute by itself. Tasks are executed by the Migrator for Notes to Exchange Task Scheduler (qsched.exe).

The task scheduler is a separate command-line application that executes the scheduled Migrator for Notes to Exchange tasks. The program checks the SQL database to see whether any tasks have been scheduled to run since the last check, and then executes these tasks. You can manage the task scheduler as you would any other Windows service using the Windows Service Manager. Instructions for configuring a Windows service can be found at: [http://msdn.microsoft.com/en-us/library/ms681921\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/ms681921(v=vs.85).aspx)

For more information about configuring and using the task scheduler, see the section titled Using the Qsched.exe task-scheduling utility in the *Migrator for Notes to Exchange Administration Guide*.

Conditional: Configure *SetUserAccountControl* and *UserAccountControl* parameters



Conditional Substep: This substep applies only if you will use Migrator for Notes to Exchange to create objects in the target AD.

If you will use Migrator for Notes to Exchange to create user objects in the target AD, use a text editor to add (or edit) these parameter settings in the *Global Defaults*:

```
[Active Directory]
SetUserAccountControl=1
UserAccountControl=512
```

Optional: Configure automatic retries of Provisioning Wizard communications with Active Directory

The MNE Provisioning Wizard includes the ability to retry transmissions to Active Directory when issues occur. In some environments, transmissions to AD can be occasionally interrupted, which may lead to incomplete provisioning. If you expect your provisioning may be significantly affected by such issues, you can use a text editor to configure these features by program parameters in the [ActiveDirectory] section of Task Parameters and Global Defaults:

```
[ActiveDirectory]
PSRetryAttempts=<#> // integer (number of retries), default=3
PSRetryWait=<##> // integer (seconds), default=15
```

The *PSRetryAttempts* parameter tells the Provisioning Wizard how many times to retry the transmission, at intervals specified by the *PSRetryWait* parameter. If the error persists through all retry attempts, the wizard will note the error in the log, skip the current message property or element, and move on to process the next item. Depending on the **Log level** setting (on the *Specify Run Information* screen), the retry attempts may appear in the program logs with no other documented error or warning. The default settings (*PSRetryAttempts=3*, *PSRetryWait=15*) tell the wizard to retry an AD transmission to a maximum of three attempts at 15-second intervals.

i | **IMPORTANT:** If you set the *PSRetry* parameters to some values higher than their defaults, you should also consider adjusting the *WatchDogMinutes* parameter. *WatchDogMinutes* specifies the number of minutes (default=180) of inactivity the Data Migration Wizard will wait before concluding the connection has timed out and aborting the process. Quest recommends you set *WatchDogMinutes* at the greater of: its 180-minute default, or a setting of 10 minutes for every 30 seconds of retry waiting (*PSRetryAttempts* x *PSRetryWait*).

Conditional: Prepare *customattrs.tsv* file to migrate Notes custom attributes



Conditional Substep: This substep applies only if you want to migrate Notes custom attributes.

A Notes message contains several standard attributes such as the *From*, *To* and *Subject* fields, and can also include user-defined fields. The MNE Data Migration Wizard and SSDM can migrate custom Notes attributes from email messages and Notes contacts to unused properties in Exchange, but only if the migration app knows which properties in the target correspond to which attributes in the source. The migration of custom attributes therefore requires that someone map these source-to-target attribute associations in a *tsv* data file, before the migration, so the migration apps can refer to that file to migrate the attributes.

This mapping file must be a unicode (not ANSI) file named *customattrs.tsv* in the default installation folder for the Data Migration Wizard (typically *C:\Program Files\Quest\Migrator for Notes to Exchange*), and also in the folder containing *notesdtapp.exe* if you want to migrate Notes custom attributes via the SSDM. Either or both migrator applications can refer to this file to map the source attributes to free (unused) properties in Exchange.

Migrator for Notes to Exchange installs a unicode *attrs.tsv* file, with the same column headings required for *customattrs.tsv*, that you can use as a template to create the *customattrs.tsv* file.

To create and prepare the *customattrs.tsv* file

- 1 Use a text editor to open *attrs.tsv*, and save the open copy under the new name *customattrs.tsv*. Ensure you save *customattrs.tsv* as a unicode (not ANSI) file, in the folder(s) as previously mentioned. Delete any data rows that may appear in the copy.
- 2 Enter a data row for each custom attribute you want to migrate, and enter pertinent values for these columns:

- **ID:** Name of the custom attribute—a unique string that distinguishes this row's custom attribute from all others in the file.

i | **IMPORTANT:** If any data rows remain in the original *attrs.tsv* file, make sure that no **ID** value in *customattrs.tsv* is the same as any **ID** value in *attrs.tsv*. *Custom attributes will not migrate correctly if any ID value appears in both files.*

- **SourceProperty:** Name of an attribute that has been added to a Notes mail message or a Notes contact, to be migrated to a property in Exchange.
- **TargetPropertySet:** The GUID for the target property set, which must be one of these values:

```
PS_PUBLIC_STRINGS  
{HHHHHHHHH-HHHH-HHHH-HHHH-HHHHHHHHHHHHH}
```

... where each "h" is a hexadecimal character, with letters uppercased.

If the **TargetPropertySet** value is *PS_PUBLIC_STRINGS*, the familiar GUID for the set named will be substituted for the string provided.

TargetPropertySet can be left blank, but in that case **TargetProperty** (see below) must be an integer property ID in the range 0x0000-0x7FFF.

- **TargetProperty:** Name of the corresponding MAPI property in Exchange. A hexadecimal user-property value will be created in Exchange on each migrated mail message or contact with the Notes property, which will hold the value. The hexadecimal values of the created properties will be reported in the log (search for "custom attr" in the log file).

If **TargetPropertySet** (above) is left blank, this **TargetProperty** value must be specified as a 16-bit integer in the range 0x0000-0x7FFF that is not already defined for some other MAPI property.

- **TargetPropertyType:** The data type of the MAPI property, which must logically correspond to the data type used in Notes. Valid values are: STRING, MV_STRING, LONG, SYSTIME, BOOLEAN.
Also, "PT_" may be prepended to any of the five types above, so valid values include PT_STRING, PT_MV_STRING, etc.

3 Save and close the updated *customattrs.tsv* file.

For example, a typical *customattrs.tsv* file might look something like this:

ID	SourceProperty	TargetPropertySet	TargetProperty	TargetPropertyType
Attr1	ArchiveId	{D0F41A15-9E91-D111-84E6-0000F877D428}	Archive ID	STRING
Attr2	ArchivedDate	{D0F41A15-9E91-D111-84E6-0000F877D428}	Archived Date	STRING
Attr3	SaveSetId	{D0F41A15-9E91-D111-84E6-0000F877D428}	Saveset ID	STRING
Attr4	RetentionCategory	{D0F41A15-9E91-D111-84E6-0000F877D428}	Retention Category	STRING
Attr5	HasAttachments	{D0F41A15-9E91-D111-84E6-0000F877D428}	HasAttachments	STRING

Troubleshooting problems in migrating Notes custom attributes

You can use the Microsoft *MfcMapi.exe* utility to view the property and its value, if they have been created. (The utility is a free download from Microsoft. You can search in Google for "mfcmap" and visit the www.microsoft.com/downloads link.) Most problems in migrating custom attributes can be diagnosed by these quick tests:

- Verify that the target property specified in the *customattrs.tsv* file does not already exist, and that the target property is in the correct format. See [About MAPI properties](#) below for more information about this.
- Verify that the *customattrs.tsv* file is UNICODE, not ANSI.
- Verify that the last line in the *customattrs.tsv* file is followed by a line feed and carriage return (position the cursor at the end of the last line and press **Enter**).
- If any data rows remain in the original *attrs.tsv* file, make sure that no **ID** value in *customattrs.tsv* is the same as any **ID** value in *attrs.tsv*. *Custom attributes will not migrate correctly if any ID value appears in both files.*

About MAPI properties

A named property's name is a property-set GUID and an ID that is either a 32-bit integer or a string. A 16-bit integer alias in the range 0x8000 to 0xFFFF is assigned to the named property by MAPI. That alias is mailbox-specific.

An unnamed property's name is a 16-bit integer in the range 0x0001 to 0x7FFF. That 16-bit integer is valid in all mailboxes. Examples of unnamed properties are 0x0070 (i.e., *PR_CONVERSATION_TOPIC*) and 0x6656, both of which happen to be used by MAPI. So these two examples cannot be used as target property values for message attributes since they are already used, although they *may* be used to map Notes contact attributes to Exchange.

A custom property can be unnamed or named.

If it is unnamed, you must select a 16-bit integer *TargetProperty* in the range 0x0001 to 0x7FFF that is not already in use by MAPI. Note that the following values are reserved by MNE:

- 0x6306
- 0x6309
- 0x630A
- 0x630B
- 0x630C

If it is named, you can select any property-set GUID. If you select a property set that is already in use, you must choose a 32-bit integer or string ID that is not already in use in that property set. If you select a brand new property-set GUID, you need not worry about IDs already in use because there will not be any.

If you want named custom properties, Quest recommends you use the *PS_PUBLIC_STRINGS* property-set GUID, (*PS_PUBLIC_STRINGS* being an alias for {00020329-0000-0000-C000-000000000046}), and use string IDs with a prefix that is unique to your application (like "Quest-").

Step 4 (if mail routing by domain differentiation): Configure mail routing domains



Conditional Step: This step applies only if you will configure email coexistence by temporary routing domains (domain differentiation in DNS) during the migration. If you will instead use smart hosts for mail routing (or will not configure mail routing at all), skip ahead to step 5.

Whether you are implementing SMTP mail connectivity only or complete coexistence with Quest CMN, most migrating organizations use temporary SMTP domains to route traffic between Notes and Exchange. Other administrators prefer to configure SMTP mail routing with smart host servers, for single-namespace environments. In either case, the routing method must be configured at both the server and user levels. At the user level, Notes person documents and AD object records are configured later in this procedure, when provisioning the target AD and synchronizing the two directories.

Notes-to-Exchange mail routing is configured so that new mail in Notes, both external inbound mail and internal mail from not-yet-migrated Notes users, can be correctly routed to already-migrated recipients in Office 365. The Notes-to-Exchange routing domains therefore must be configured (but not yet activated) before the first user collection is migrated to Exchange. The forwarding rules will then be activated for each user collection as that collection is migrated.

External inbound mail can be switched (by MX record) to arrive in Exchange instead of Notes at any time after mail-enabled objects have been provisioned into AD—before, during or after the actual migration. Many admins prefer to minimize change before and during the migration process, so they update the MX record only when the migration is complete. Others prefer to minimize the forwarding "hops" by switching about halfway through the migration process. And some make the switch as soon as the target AD objects are mail-enabled.

Whenever the DNS switch occurs, the Notes routing domains (for Exchange-to-Notes mail routing) must be configured before the switch, so Exchange can route mail for not-yet-migrated recipients to their Notes mailboxes.

To configure subdomains for mail routing by domain differentiation:

The routing domains may be subdomains of the primary domain (e.g., *notes.domain.com* and *ex.domain.com*) or completely separate SMTP domains. As long as they are unique to the respective mail systems, they will suffice for routing purposes. To configure subdomains:

- 1 If appropriate SMTP domains are not already available, create them in DNS. One should direct traffic to Exchange (e.g., *exchg.domain.com*). Mail sent to the Notes mailboxes of migrated users will be forwarded to the corresponding mailboxes in Exchange using the *exchg.domain.com* domain. The other SMTP domain (e.g., *notes.domain.com*) may be used to route mail back to Notes for users who have not yet migrated.
- 2 After configuring the new *exchg.domain.com* domain in DNS, configure Exchange to accept the SMTP domain, and create a recipient policy to generate appropriate secondary SMTP addresses, so all Exchange users will be able to receive mail at this domain.
- 3 Configure Notes to accept mail to the new *notes.domain.com* SMTP domain/address.
- 4 Verify the new domains by testing mail flow.

Step 5 (optional): Configure coexistence strategy



Conditional Step: This step applies only if you will configure some method of email, directory and/or free/busy coexistence during the migration transition period. If you will migrate without coexistence, skip ahead to step 6.

Configure your coexistence strategy:

- **For complete coexistence with Quest CMN:** Refer to the CMN documentation to install and configure the desired components (Directory Connector, Free/Busy Connector, and/or Mail Connector). If applicable, Directory Connectors should be created and run to update Domino and Active Directory with routing objects corresponding to the users in the other system (to establish complete directories).

i | **IMPORTANT:** If you have existing mail-enabled objects in AD, enable the *Migrator for Notes to Exchange Compatibility Mode* for the CMN Directory Connector(s) that will populate AD from Notes, to avoid duplicate entries in AD. The CMN Mail Connector and Free/Busy Connector can be configured similar to other scenarios. See the CMN *User Guide* for much more information.

Remember to verify your CMN configuration by testing mail flow.

- **For SMTP mail routing (without CMN):** If you have not already tested mail flow to verify the subdomains you configured in the preceding step, do it now.

If you will use the CMN Free/Busy Connector

Be sure to define free/busy and mail domains in the Domino Administrator:

- Add a **Foreign Domain** for the free/busy server:
 - **Mail Information** tab: Set **Gateway server name** to the name of the Domino mail server.
 - **Calendar Information** tab: Set **Calendar server name** to the name of the Domino server where *qcalcon.exe* is installed.
- Add a **Foreign SMTP Domain** for the mail server. On the **Routing** tab:
 - Set **Internet Domain** to the name of the Exchange subdomain.
 - Set **Internet Host** to the IP of the Internet host.

i | **NOTE:** Remember, these procedures do not create users' Exchange mailboxes until just prior to their migration (in the [Batch migration process](#)), due to the Exchange free/busy limitation (as explained in chapter 1—see the **Important** note under [Provisioning and mailbox creation](#) for Office 365). If you choose to create Exchange mailboxes earlier in this procedure, be aware that free/busy data for not-yet-migrated Notes users will be unavailable until the users are fully migrated to Exchange.

Step 6 (for Exchange 2010 or later target): Configure throttling policy



Conditional Step: This step applies only for migrations to an Exchange 2010 or later target environment, and is optional but recommended.

Some migrations to Exchange 2010 or later have achieved improved throughput using a custom throttling policy. This topic is discussed in greater detail in [this article](#).

Step 7: Discover Notes information

Migrator for Notes to Exchange needs to know the location of the Notes Address Books (NABs) that will serve as data sources for the Directory Export Wizard in the next step below. Migrator for Notes to Exchange also needs to know the Internet domains that will be used to generate users' SMTP aliases. Migrator for Notes to Exchange therefore includes Wizards to search through your Notes environment and return the necessary information:

- **NABs Discovery Wizard:** Locates available NABs and lets you specify the ones to be exported.
- **Internet Domains Discovery Wizard:** Identifies associated Internet domains.

Run these two Wizards now, to prepare for the Directory Export Wizard in the next step below. For operational details, see the Migrator for Notes to Exchange *Administration Guide*.

Step 8: Export Notes directory data

The MNE Directory Export Wizard extracts user and group data from the Notes environment and populates The MNE SQL database and other data files with this information. Other Quest applications require this data for input values. Run the Directory Export Wizard now to capture the necessary information. For more information and complete operating instructions for the Directory Export Wizard, see the *Directory Export Wizard* chapter in the Migrator for Notes to Exchange *Administration Guide*.

Step 9: Review and verify/modify the exported data in the SQL database

The data captured by the Directory Export Wizard provides critical input to other Migrator for Notes to Exchange programs, so it is important to verify that the information is accurate and properly formatted. This verification step also provides an opportunity to update addresses and other attributes as necessary before initiating migrations. For example, the content may be modified to facilitate the organization's consolidation to a new SMTP domain as part of the migration process.

Verify the matching criteria for the provisioning process (in a later step below). A unique matching attribute will be required to match each Notes user to a corresponding security object in AD. A matching attribute may already be available, or a custom attribute can be populated in the Domino Directory and exported, or a matching attribute can be populated into the MNE SQL database via TSV export/import.

If mail-enabled users already exist in Active Directory: Make sure the addresses listed in the *TargetAddress* column are appropriate, since Migrator for Notes to Exchange will use that value to locate the AD object for mailbox creation. The value of the *TargetAddress* in the SQL database must therefore match a valid SMTP address on the mail-enabled AD object. The *TargetAlias* addresses also will be applied as secondary/proxy addresses, so it is important to verify them before proceeding.

If the target AD is configured for a resource forest and a user forest: prepare the SQL database for mailbox-enabling



Conditional Substep: This substep applies only if your target AD is configured for a resource forest and a user forest, with corresponding user accounts.

For the Data Migration Wizard to properly enable mailboxes, and to properly associate the resource accounts with the user accounts, you must configure the *Global Default Settings* in Notes Migration Manager, and prepare (or verify) the per-user values in a column of the exported directory data. These preparations are necessary for the Data Migration Wizard to properly associate the resource accounts with the user accounts and properly enable mailboxes.

Before you begin, you must determine which column in the SQL Server database will correspond to which AD attribute, for the wizard to match corresponding user accounts in the resource forest and user forest. The column (*AdSearchCol*) and attribute (*AdAttribute*) are both specified in the *[ActiveDirectory2]* section of the *Global Default Settings* of Notes Migration Manager:

- *AdSearchCol*: The column in the SQL Server database whose values the program should search for each particular *AdAttribute* value, to match corresponding user accounts in the resource forest and user forest. Note that the column specified here and its per-user values must exist before the Data Migration Wizard is run.

i | **IMPORTANT:** In the current Migrator for Notes to Exchange version, this *AdSearchCol* parameter value **must** be set to *SearchKey2* for the mailbox-enabling process to succeed. The parameter default is *AdSearchCol=SearchKey2*.

- *AdAttribute*: The AD attribute whose values the program should read in the *AdSearchCol* column of the SQL database, to match corresponding user accounts in the resource and user forests. For example:

```
[ActiveDirectory2]
AdSearchCol=SearchKey2
AdAttribute=userPrincipalName
```

... tells the wizard to match AD objects with users such that the value of each AD object's *userPrincipalName* attribute matches the value of the corresponding user's *SearchKey2* column in the SQL Server database.

To configure the Global Default Settings:

- 1 Within Notes Migration Manager, select **File | Global Default Settings**. The program then opens the program configuration settings in Windows Notepad. The settings look like the contents of an INI file, but are actually saved as a part of the SQL Server database.
- 2 In the *[ActiveDirectory2]* section, set the appropriate parameter value for *AdAttribute*, as described above.
- 3 Close Notepad. Notes Migration Manager then copies the new parameter value back into the SQL Server database.

If you need to enter or edit the AdSearchCol column values:

- 1 Within Notes Migration Manager, in the *Export Notes Directory* screen: Click **Export objects to TSV**. A dialog box will prompt you for a destination folder and filename for the exported file.
- 2 Use Microsoft Excel (or some other tsv-editing program) to enter or edit the contents of the column you designated as the *AdSearchCol* column.
- 3 In the *Export Notes Directory* screen: Click **Import objects from TSV** to import the edited .tsv file into the SQL Server database. A dialog box will prompt you for the filename and its location.

Step 10: Define user collections

Many of the Migrator for Notes to Exchange Wizards are applied to particular user *collections*: user-defined subsets of all Notes users to be migrated. User collections can come in all sizes, from a single user up to the entire universe of users all in one collection. Collections typically number a hundred or so users per batch when migrating to a local Exchange.

The Migrator for Notes to Exchange *Pre-Migration Planning Guide* (see in chapter 3, *Batch vs. Per-Desktop Migration*) explains a few factors that are likely to affect your optimum number of users per collection, and why it is important to decide on a grouping strategy for defining collections.

Use the Collection Wizard now to define your user collections. Remember to *remove* from collections any objects you do *not* want to provision into the target AD. See the *Collection Wizard* chapter 5 of the Migrator for Notes to Exchange *Administration Guide* for more information, application notes and field notes.

i | NOTE: Notes groups (distribution lists) are typically migrated separately, after all users have been migrated. The definition of group collections and migration of groups are among the [Post-migration activities](#).

Later in this procedure you will be able to assess per-user data volumes in the Notes source, and then adjust your defined collections if appropriate.

If migrating to two or more mail stores ...

Some administrators prefer to provision users in the same user collection to two or more Exchange mail stores. This can be accomplished by updating the SQL database to include appropriate values for the *HomeMDB* of each user.

The *HomeMDB* column specifies the Exchange mailbox store for each migrating user and is used when mailbox-enabling users through the *Exchange Administrative Operations* of the Data Migration Wizard. For example:

```
CN=Mailbox Store (MOBE),CN=First Storage Group,CN=InformationStore,CN=MOBE, CN=Servers,CN=First Administrative Group,CN=Administrative Groups, CN=User, CN=Microsoft Exchange,CN=Services,CN=Configuration,DC=Example,DC=com
```

Note that the Exchange admin credentials supplied to Migrator for Notes to Exchange must have sufficient rights to create mailboxes on the Exchange server(s) specified in this *HomeMDB* column. If the *HomeMDB* column is left

blank, the value specified in the Migrator for Notes to Exchange GUI will be used for the destination Exchange mailbox store.

Also: Define custom design classes



Conditional Substep: This substep applies only if your Notes environment uses any non-standard design classes.

The MNE Notes Migration Manager (the console) lets you identify any non-standard Notes design classes that may be associated with Notes NSF files, but that the wizards would not otherwise recognize because their names are different from the Notes-standard design classes. The *Design Classes* table in Notes Migration Manager enumerates all such non-standard design classes, and associates each design class with one or more particular data types: mail, archives, or PABs. If the Data Migration Wizard or SSDM finds an NSF file that doesn't match any of the program's default design classes for archive, mail or PAB files, the program will look at these tables to find an alternate design class, and thereby determine the file type.

If your Notes environment has any non-standard design classes, use the *Manage Design Classes* screen in Notes Migration Manager to define them now, as part of this collection-definition step. This feature is fully documented in the Migrator for Notes to Exchange *Administration Guide*, chapter 1 (see *User Collections: Manage Design Classes*).

Step 11: Provision AD with mail-enabled users

Users must be provisioned as security principals in the target Active Directory before any user data can be migrated. Your choices for provisioning methods, and the implications of those choices, are explained in the Migrator for Notes to Exchange *Pre-Migration Planning Guide* (see *Provisioning the Target Active Directory* in chapter 2).

Migrator for Notes to Exchange tools can provision AD from the Notes source, as described below. For our purposes, this provisioning step also includes object merging (if necessary) and *mail-enabling* of the provisioned objects. By the end of this step, AD should contain a single mail-enabled object corresponding to each user you intend to migrate in the Domino source directory.

i **NOTE:** This process does not create users' Exchange mailboxes until just prior to their migration (per user collection, in the [Batch migration process](#)), due to the Exchange free/busy limitation (explained in chapter 1, see the **Important** note under [Migration to proprietary Exchange](#)). If you will not configure free/ busy coexistence, you could create Exchange mailboxes earlier in the process, in these *Pre-Migration Preparations*, as long as you also set Exchange-to-Notes mail forwarding for not-yet-migrated Notes users.

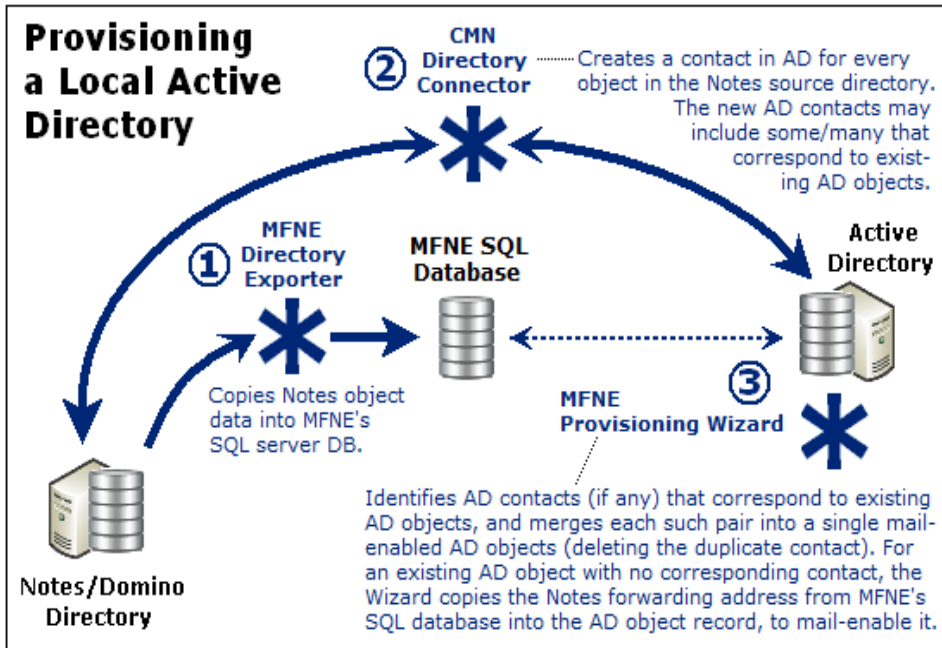
The typical and most direct method to provision Active Directory begins with an Migrator for Notes to Exchange directory export (step 8 above), followed by a directory update by CMN's Directory Connector, as noted below. The illustration below includes the export of Domino directory data into the MNE SQL server database.

This provisioning step is necessary even if you have an existing AD that is already provisioned with user objects, since the AD object records must be synchronized with the latest Notes source object records before migration.

Quest recommends this process to provision Active Directory (after the directory export has populated the MNE SQL server database, in step 8):

- 1 **Synchronize the Notes/Domino directory with AD.** Use the CMN Directory Connector (or some other method) to perform a bidirectional update between the two directories. Other tools and methods are also possible, but CMN was designed to complement the Migrator for Notes to Exchange tools. This synchronization reads user data from the Notes source to create corresponding mail-enabled contacts in AD, and vice-versa, to update both directories with routing objects corresponding to the users in the other system (to establish complete directories).

If Active Directory does not already contain user objects, this directory update will create them. Many organizations will already have an Active Directory in place for network authentication, with users already provisioned as security objects. In this case you should configure the directory update to create new contacts in AD, which will correspond to the existing user objects in AD. (CMN's Directory Connector can detect and merge potential duplicate entities by comparing their addresses, but security objects that have



been used only for network authentication typically do not have email addresses assigned. See the *CMN User Guide* for much more information.) If applicable, create the necessary connectors in CMN's Directory Connector component, and run them to update both directories.

i NOTE: Migrator for Notes to Exchange also includes a feature that can provision users in AD and Exchange (with mailboxes) directly from contact objects. This can be valuable in environments where security principals do not already exist in AD, and CMN is used to create routing contacts in AD. This approach also is useful for provisioning resource objects in some scenarios. This behavior is controlled by the *MBoxFromContact* parameter setting, described in greater detail in the Migrator for Notes to Exchange *Program Parameters Reference*.

- 2 Run Migrator for Notes to Exchange's Provisioning Wizard (for all user collections) to consolidate any duplicate entities in AD and mail-enable objects that were already in AD.** The Provisioning Wizard merges each contact's information into the original corresponding AD object record, and then deletes the contact, leaving a single mail-enabled object in AD for each Notes user. Future directory updates will then see the merged AD object's address attribute, so will not re-copy the corresponding Notes object.

If contacts were not added to AD for directory coexistence, the Provisioning Wizard can be used (without contacts) to mail-enable the existing security principals. In this case, addresses and attributes are pulled from Migrator for Notes to Exchange's SQL database to mail-enable objects—since no corresponding contacts exist in AD.

In any of these scenarios, the result is a single, mail-enabled user object corresponding to each Notes user, and the preservation of any existing security, credentials, and routing. See the Migrator for Notes to Exchange *Administration Guide* (the *Provisioning Wizard* chapter) for instructions and application notes.

- 3 Verify Notes forwarding addresses.** Your mail-routing method will let migrated users communicate with not-yet-migrated Notes users, relying on existing mail-enabled AD objects to do so. The routing addresses must therefore be verified and tested to ensure proper delivery.

Step 12: Assess per-user migration volume

Before you migrate any users, you should have a general sense of the volume of data to be migrated by each user, and in each user collection. Migrator for Notes to Exchange offers a Notes Data Locator Wizard that finds source data stores, and determines the per-user data volumes within those stores.

Run the Notes Data Locator Wizard now to find the source data and review per-user data volumes for *all* user collections, and to verify ownership of archives and PABs prior to migration. Then **View Summaries | User and Resource Detail** to review the per-user data volumes, and refine your collection members (if necessary) to accommodate any unexpected or atypical data volumes. The Notes Data Locator Wizard is documented in a chapter of the Migrator for Notes to Exchange *Administration Guide*. The *View Summaries* features are part of Notes Migration Manager, documented in chapter 1 of the *Administration Guide*.

Step 13 (or when appropriate): Redirect inbound external mail to Exchange

Modify the MX record to direct incoming external (Internet) mail to the Exchange server. Actually the DNS modification can occur at any time after the users' AD accounts have been mail-enabled—before, during or after the actual migration. Some admins prefer to minimize change before and during the migration process, so they opt to update the MX record after the migration is complete (as described in the [Post-migration activities](#) at the end of this chapter).

Others prefer to minimize the "hops" in the forwarding route by modifying the DNS about halfway through the migration process. Some make the switch right after the target AD objects have been mail-enabled (in an earlier step).

In any case, after inbound mail is directed to Exchange, the Notes forwarding addresses in mail-enabled AD objects will route incoming mail to the Notes mailboxes of not-yet-migrated users until they are migrated. Incoming mail is not sent to Exchange mailboxes until Migrator for Notes to Exchange tells Exchange to stop routing mail to Notes for those users—when the users are actually migrated to Exchange with their own Exchange mailboxes.

Step 14 (if necessary): Replicate or copy local data to a central location



Conditional Step: Applies only if you want to use Migrator for Notes to Exchange's Data Migration Wizard to batch-migrate data that resides on end users' workstations.

Migrator for Notes to Exchange includes several options for migrating data that resides on end users' workstations. One approach uses Migrator for Notes to Exchange's Self-Service Desktop Migrator (SSDM), which offers an optional *Silent Mode* to minimize user interaction and impact. This approach is discussed in more detail in chapter 4 ([SSDM \(per-desktop\) migration](#)) of this *Guide*.

Some scenarios, however, require centralized batch migration of local Notes PABs and archives. Migrator for Notes to Exchange's Data Migration Wizard (in the [Batch migration process](#), as described in the next section of this chapter) can migrate content to Exchange mailboxes, personal archives, or PST files. In that case, the program must have access to the source data. Migrator for Notes to Exchange includes a *PAB Replicator* feature to automate the process of replicating end users' PAB data to server-based NSFs or the mail file of each user. Alternatively, users' local data could be copied to a central location by some other means.

Step 15 (if using smart hosts for mail routing): Configure smart hosts



Conditional Step: Applies only if you intend to use smart hosts for SMTP mail routing.

Establish and configure the Domino and Exchange smart host servers, and remember to verify the configurations by testing mail flow. The creation of mail-enabled Active Directory accounts (in an earlier step) has entered the necessary *targetAddress* values into the AD object records.

The details of configuring smart-host SMTP mail routing are beyond the scope of this *Guide*, but see your Domino and Exchange documentation and online resources for more information about configuring smart hosts for those servers.

To configure smart-host SMTP routing with Quest's CMN, both smart hosts are configured to point to the CMN server. Within CMN, one set of SMTP IN and SMTP OUT queues is configured to accept mail from Domino and deliver it to the receiving Exchange server, while another set is configured to accept mail from Exchange and deliver it to Domino. Multiple CMN servers can be deployed for load balancing and redundancy. The *CMN User Guide* (chapter 3) explains these configurations in much greater detail.

When pre-migration preparations are complete ...

When you have completed the pre-migration preparations described above, go on to the [Batch migration process](#) below, and/or see chapter 4 for information about [SSDM \(per-desktop\) migration](#).

Batch migration process

Migrator for Notes to Exchange includes two migration engines:

- The **Data Migration Wizard** migrates batches of users simultaneously, and performs valuable administrative functions (e.g. mailbox creation, routing updates, etc.), provisions public distribution lists.
- The **Self-Service Desktop Migrator** (SSDM) runs on end users' local workstations and migrates content for one user. SSDM streamlines the migration local content, reduces burden on the migration team, and includes a *Silent Mode* to minimize end user interaction and requirements.

Either migration engine can be used independently for the entire data migration, or the two may be used together to meet a variety of project requirements, as discussed in the *Pre-Migration Planning Guide* (see the *Batch vs. Per-Desktop Migration* topic in chapter 3).

This section provides process instructions for a typical migration to a proprietary Exchange, in which an administrator uses the Data Migration Wizard to perform the migrations for multiple batches (Migrator for Notes to Exchange *collections*) of users. [SSDM \(per-desktop\) migration](#), described in chapter 4, may also be part of your Migration Plan.

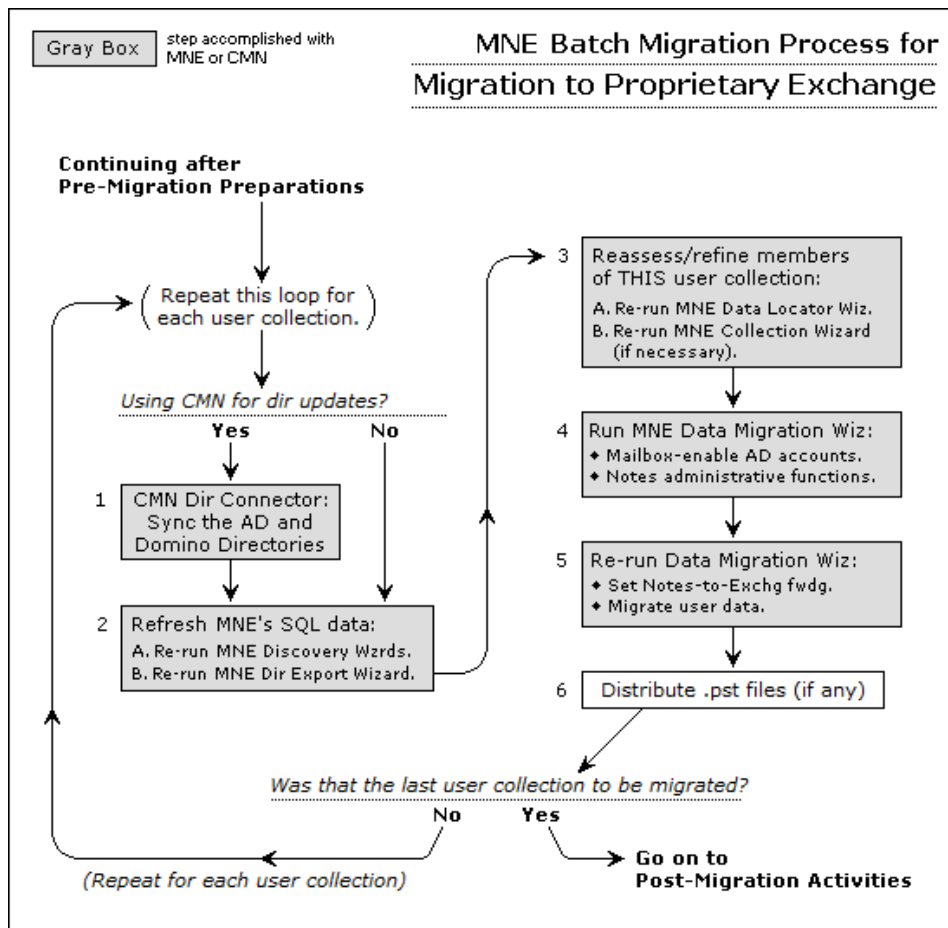
i | **IMPORTANT:** Be sure you have completed all of the [Pre-migration preparations](#) described earlier in this chapter before you begin this batch-migration process.

This batch-migration procedure is **repeated for each group** of users to be migrated, as shown by the looping arrow in the flow chart. The first pass through the procedure begins with these assumptions:


- The target Active Directory is now provisioned with a single mail-enabled object for each Notes object you want to migrate, but no mailboxes have yet been created for these objects.
- The Notes forwarding addresses in the target AD objects are verified as functional for forwarding mail from Exchange back to Notes.
- Migrator for Notes to Exchange user collections have been defined (although they may be adjusted with each pass through the batch-migration process).
- If you intend to use some coexistence strategy, your coexistence method and tools (such as Quest's Coexistence Manager for Notes), has been configured for any/all coexistence features you plan to use.

The flow chart summarizes the batch-migration process for a proprietary Exchange target. The step numbers in the flow chart correspond to the step numbers in the process instructions below.

The instructions and field notes here and in the Migrator for Notes to Exchange *Administration Guide* both contain special notes for optional and conditional steps in these procedures.



Step 1: Sync the AD and Domino directories

If  **Conditional Step:** This step applies only if Quest's CMN is used for directory updates. If not, skip ahead to step 2.

Organizations typically experience staff additions and departures during a migration transition period. Any directory changes that occur during the migration project may introduce data inconsistencies between the source and target environments—changes that occur after the initial directory updates in the pre-migration preparations. These can be reconciled using CMN's Directory Connector. See Quest's *CMN User Guide* for details.

CMN's Directory Connector can be configured to automatically run directory updates at scheduled intervals. However, it may be useful to also initiate updates manually at this step in the process to ensure the directories are consistent just prior to migrating each collection.

Step 2: Refresh Migrator for Notes to Exchange's SQL data

To make sure your target AD is provisioned with current object data, update Migrator for Notes to Exchange's SQL database before migrating each user collection. If you have updated the directories in step 1 above (optional), this process will also copy all updated directory data into the SQL database. To update the SQL server database:

- 1 Re-run Migrator for Notes to Exchange's NABs Discovery Wizard and Internet Domains Discovery Wizard to refresh the location of the Notes Address Books (NABs) and the list of Internet domains that will be used to generate users' SMTP aliases.
- 2 Re-run the Directory Export Wizard to refresh the SQL database.

Step 3: Reassess and (if necessary) refine the membership of this user collection

You defined your user collections (migration groups) in the [Pre-migration preparations](#) earlier in this chapter. Each pass through this [Batch migration process](#) applies these migration tasks to a single collection.

Now that you have updated your directories and refreshed your SQL data (the two preceding steps), you should:

- 1 Re-run Migrator for Notes to Exchange's Data Locator Wizard *for this collection (only)*, and then **View Summaries | User and Resource Detail**, to reassess the per-user data volume in the Notes source for this collection. The Notes Data Locator Wizard is documented in chapter 7 of the Migrator for Notes to Exchange *Administration Guide*. The *View Summaries* features are part of Notes Migration Manager, documented in chapter 1 of the *Administration Guide*.
- 2 Reassess this collection's membership, with respect to the total data volume to be migrated with this collection's members. You may want to move some members from one collection to another to better conform to your organization's grouping strategy (see the *Batch vs. Per-Desktop Migration* topic in chapter 3 of the Migrator for Notes to Exchange *Pre-Migration Planning Guide*).
- 3 If necessary, rerun the Collection Wizard for this collection to change its membership. Chapter 5 of the Migrator for Notes to Exchange *Administration Guide* provides field notes and application notes for the Collection Wizard.

i | NOTE: Remember that Notes groups (distribution lists) are typically migrated separately, after all users have been migrated. The [Post-migration activities](#) described below include the migration of groups.

Step 4: Create Exchange mailboxes and perform Notes administrative operations

Run the MNE Data Migration Wizard to create Exchange mailboxes and perform pertinent Notes administrative tasks for the users in the current collection. See the *Data Migration Wizard* chapter of the Migrator for Notes to Exchange *Administration Guide* for complete instructions. Note that after this step Exchange will route all free/busy queries for these users to their new Exchange mailboxes, to which the users will be fully migrated in the next step below.

The Notes administrative operations you select here will depend on your local circumstances and needs. The available Notes admin operations are:

- **Set foreign directory sync** (feature available only when *not* setting or removing mail routing): Tells the wizard to let CMN's Directory Connector extract user data from the Notes directory during its directory synchronization. (This corresponds to the Notes parameter *Allow foreign directory synchronization*.) To disable foreign directory sync, leave the checkbox marked but select *Disable* in the drop-down list box.

In some configurations, migrated objects that have been merged or mailbox-enabled in AD become unrecognizable to a Notes' directory update, so the update mistakenly creates duplicate objects in AD. You should therefore *Disable* foreign directory sync if all three of these conditions are true:

- You are using the CMN Directory Connector to perform directory updates from Notes to Exchange during coexistence; *and*
 - Your mail-routing method during coexistence is to use Notes forwarding addresses to set forwarding from Notes to Exchange; *and*
 - The Notes person documents are not set to turn users into Exchange objects.
- **Set user visibility in the Domino directory:** Tells the wizard to let you specify the preferred scope of user visibility in the Domino directory. This visibility setting is especially important when Quest's CMN is used to update both directories with modifications. As mailboxes are created in Exchange for migrating users, it may also be advantageous to set visibility for the same user population. This eliminates the possibility of duplicate entries appearing in the Domino directory for migrated users after subsequent runs of the Directory Connector. The timing of this operation should be coordinated with the Exchange-to-Notes Connector schedule within CMN to ensure the Exchange entries for migrated users a synchronized back to Notes shortly before or after the visibility change.
 - **Set Person Document Attributes:** Tells the wizard whether to assign attribute values to Notes person documents as defined by parameters in the *[PersonDocCustom]* section of the Task Parameters. (See that section of the Migrator for Notes to Exchange *Program Parameters Reference* for information about how to assign the values.) If this checkbox is unmarked, the wizard will ignore the *[PersonDocCustom]* section of the Task Parameters.

Step 5: Set Notes-to-Exchange mail forwarding, and migrate user data

i **NOTE:** Quest recommends you perform the final cutover tasks in a separate program run of the Data Migration Wizard, rather than in the same run with mailbox-enabling and Notes admin operations (in the preceding step). Some admins have reported latency conflicts when trying to perform all of these tasks together in a single program run.

A user is said to be migrated when he or she has an Exchange mailbox, and all external and internal mail for that user is routed to the new Exchange mailbox, and all of the user's data has been copied to Exchange (mail, calendar entries, address books, archives, etc.). The event that migrates a user to the target environment is called the user's "cutover" or "final cutover." In this procedure we migrate the users' data in the same program run that we set Notes-to-Exchange mail forwarding.

It is critical to set Notes-to-Exchange mail forwarding for these users upon their final cutover, so any mail that arrives during or after the migration will route to Exchange as expected. The Notes-to-Exchange forwarding must remain in place until the MX record is updated to point to Exchange (in the [Post-migration activities](#) at the end of this chapter), *and* all Notes users have been migrated to Exchange.

i **NOTE:** If you are migrating data using file system access (rather than by server access):

- Verify that all migrating users are logged off before you start the Data Migration Wizard. If the data is accessible through the Domino server, Quest recommends you locate and migrate the data using server access. If that is not possible, and you need to use file system access to locate and migrate the data, you must make sure that all users to be migrated (in the current collection) are logged off the system.
- Also, make sure that the server no longer has the NSF file open in its cache. The *dbcache* flush command closes all files being held open by the server for users that are no longer logged onto the server. Running the *dbcache* flush command prevents the server from blocking the Migrator for Notes to Exchange program's access to the NSF files during the migration run.

Run the Data Migration Wizard again now, to perform this final cutover for users in the designated collection: Set Notes-to-Exchange mail forwarding, and migrate user data from Domino to Exchange. See the *Data Migration Wizard* chapter of the Migrator for Notes to Exchange *Administration Guide* for complete instructions.

Step 6: Distribute .pst files (if any)

If the Data Migration Wizard migrates any data to Outlook Personal Folder (.pst) files, then when the migration is complete you must either:

- Notify users of the locations of their new .pst files (so each user can specify the location within his or her own desktop copy of Outlook).
— OR —
- Distribute the newly created .pst files to users' desktops.

The Data Migration Wizard names any new .pst files using the common filename, if specified, or the specified filename format. If more than one file is generated per User ID, incremental numbers are appended to the filename. For example, *Smith.pst*, *Smith-1.pst*, *Smith-2.pst*, etc.

- NOTE:** The location of the PST files is reported in:
- The **User migration status per collection** report, available from the *View Summaries* screen of Notes Migration Manager.
 - The **Report Pack Report**, available from the *View Report Pack* screen of Notes Migration Manager.

Was that your last migration collection?

If this is *not* your last migration collection: Repeat all the steps of this [Batch migration process](#) for the next collection.

If this *is* your last migration collection, but you have more Notes users to be migrated individually by Migrator for Notes to Exchange's SSDM: See the [SSDM \(per-desktop\) migration](#) chapter in this *Scenarios Guide*. When no users remain to be migrated, be sure to see the [Post-migration activities](#) below.

Post-migration activities

Step 1: Provision Notes groups into Exchange

Groups are typically provisioned into Exchange separately, after users are migrated in the [Batch migration process](#) (earlier in this chapter). Run MNE Groups Provisioning Wizard to provision Notes groups into Exchange as distribution groups. Groups information was earlier extracted from the Domino source and copied into the SQL database by the MNE Directory Export Wizard. Notes groups can be divided into collections using the MNE Collection Wizard for more convenient processing. If appropriate, you can update group membership and attributes in the SQL database (via TSV export and import) prior to provisioning the groups into Active Directory.

For operating instructions and application notes, see the *Groups Provisioning Wizard* chapter of the Migrator for Notes to Exchange *Administration Guide*.

If your scenario gives you some reason to provision groups before all Notes users (in all collections) have been migrated, be sure to check the *Message Delivery Restrictions* for any Exchange group to which you want Notes users to be able to send messages. Any such Exchange group must be of the *universal* distribution type to be mail-enabled. To change settings, beginning in the Exchange Management Console:

- 1 Select the group under **Recipient Configuration | Distribution Group**, then double-click the group you want to edit.
- 2 Click the *Mail Flow Settings* tab, and highlight *Message Delivery Restrictions*, then click **Properties** above.
- 3 De-select (unmark) the check box for *Require that all senders are authenticated*.
- 4 **Save**, and then restart the MS Exchange transport service.

Step 2 (optional): Configure ongoing dirsyncs



Conditional Step: This step applies only if you are using the Quest CMN product for ongoing directory updates after the migration.

If you want to keep your Notes environment up and running with an active Domino directory for a period after the migration, or indefinitely, you may want to configure the Quest CMN Directory Connector to run regular directory updates for as long as the Notes and Exchange environments coexist.

Step 3: Update mail routing

Migrator for Notes to Exchange is commonly used to automatically update mail forwarding in both systems to ensure proper routing during the migration. Migrator for Notes to Exchange can set and remove forwarding rules in both environments, as long as the mail routing domains or smart hosts are properly configured.

When the users and groups are all migrated, routing can be permanently updated to direct external incoming (Internet) mail to Exchange instead of to the Notes environment. This step includes modifying the MX record(s) to point to Exchange. In some environments, updating mail routing also includes updating routing tables and/or firewall modifications.

Most organizations prefer to update mail routing only after the last user has been migrated, to minimize change before and during the migration process. But the MX modification actually can occur at any time after all Notes users have been provisioned into Active Directory as mail-enabled objects. (If routing is updated to send inbound mail to Exchange before a particular user is provisioned, there will be no forwarding address in AD to relay the user's mail back to Notes.)

Step 4: Post-migration "clean up"

To clean up after the last user has been migrated:

- 1 **Verify the Notes server is inactive.** Make sure that the Notes server is no longer processing mail traffic or utilized for active applications.
- 2 **If you were using SMTP mail coexistence:** Delete the temporary mail routing MX domain(s) you created in the [Pre-migration preparations](#), to support routing between Notes and Exchange during the transition. Now that all users have been migrated to Exchange and inbound traffic is routed directly to Exchange, the temporary routing domain(s) should no longer be required.
- 3 **If you no longer need the Notes environment:** After you have verified Notes is inactive, you may take a final backup and decommission the environment.

Migration to Microsoft Office 365

- [Pre-migration preparations](#)
- [Batch migration process](#)
- [Post-migration activities](#)

Pre-migration preparations

NOTE: The information in this chapter applies only if migrating to Microsoft Office 365. If you are migrating to a proprietary Exchange, see chapter 2 ([Migration to a proprietary Exchange](#)) instead.

Any migration scenario requires prior preparation of the source and target environments, implementation of a coexistence strategy, configuration of admin accounts, and preparation of the required software. These procedures can be time consuming because they include configuring necessary accounts and permissions across multiple environments, configuring applications running concurrently to facilitate the migration, and other considerations. However, they are typically performed only once, before the first users are migrated, so they need not complicate the entire migration process.

Before you begin these preparations, remember to decide your strategy to accommodate the Exchange free/busy limitation, as explained in the Migrator for Notes to Exchange *Pre-Migration Planning Guide* (in chapter 2, see *Provisioning the Target Active Directory*).

The flow chart below illustrates these pre-migration preparations for migration to Microsoft Office 365. Note that the step numbers in the flow chart correspond to the step numbers in the process instructions that follow.

NOTE: Steps that apply only in particular circumstances are clearly marked with this "If" branching-arrows icon and a note explaining when the step applies.

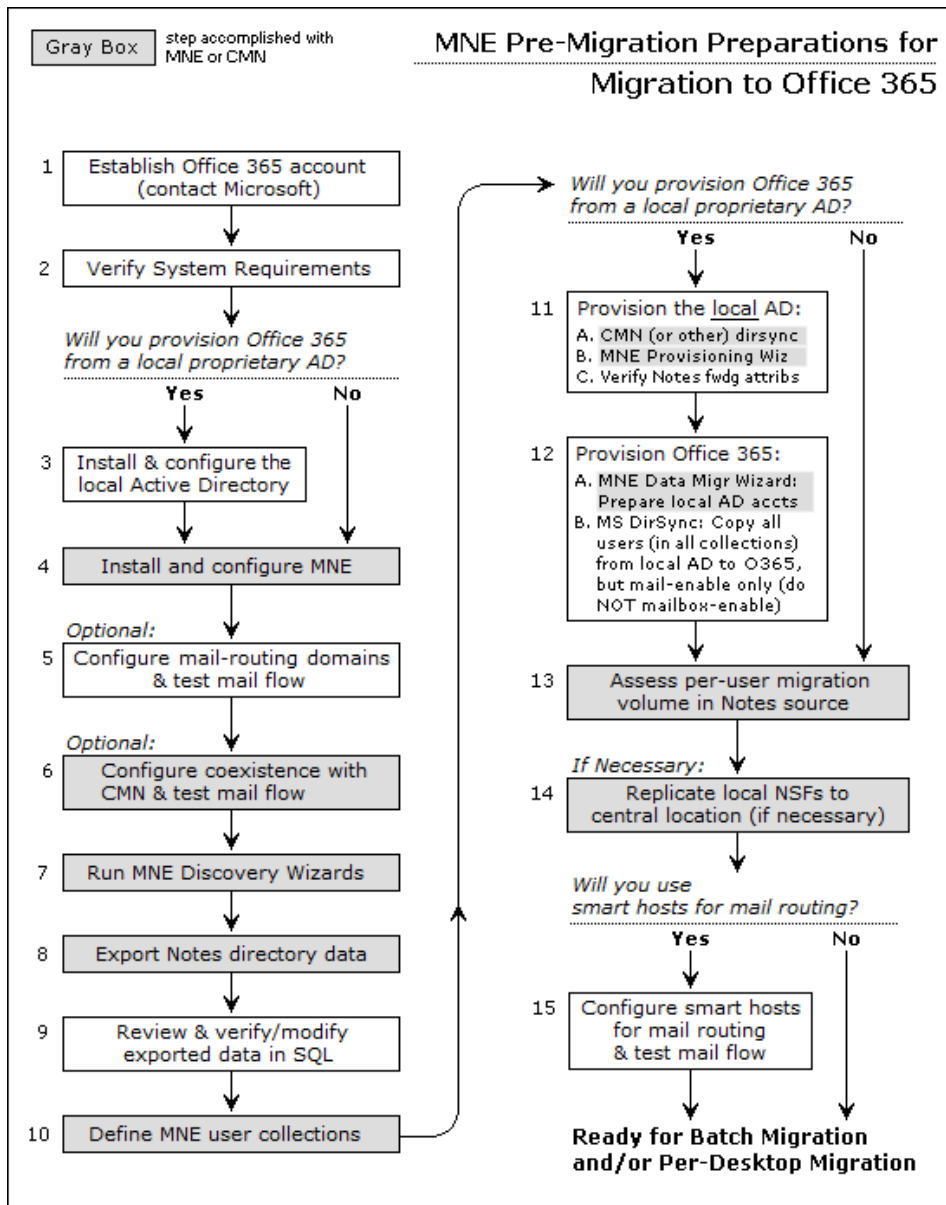
Step 1: Establish Office 365 account

Contact Microsoft to establish your Office 365 account (if you haven't already).

If you intend to provision Office 365 from an existing local Active directory, your Office 365 setup will include installing Microsoft AD synchronization tool. See your Microsoft documentation for guidance in the installation and configuration of that AD sync tool.

Step 2: Verify all system requirements are satisfied

All of the system requirements must be satisfied before you begin this process. *System Requirements* are documented in the Migrator for Notes to Exchange Release Notes (for the most recent released version of the product). *System Requirements* include the admin accounts that will be used to run the Quest applications and access data and features in the Notes/Domino and Exchange/AD environments. As such, they require particular permissions, also specified in the *System Requirements*. If these accounts do not already exist, be sure to create and configure them now.



Step 3 (if provisioning from a local AD): Install and configure the local Active Directory

If **Conditional Step:** This step applies only if you intend to provision Office 365 from a local proprietary Active Directory. If you will provision by some other method, skip ahead to step 4.

Install and configure the local proprietary AD at this time, with the Exchange schema, if it isn't already up and running. Provisioning the local AD will occur at a later step in this procedure.

i **IMPORTANT:** If you upgrade from Exchange 2010 RTM to a later Exchange version while the migration is in progress, you must also upgrade the AD schema to match.

Step 4: Install and configure Migrator for Notes to Exchange

The *Getting Started* section of the Migrator for Notes to Exchange *Quick-Start Guide* explains how to install the product. The subtopics below describe several configuration tasks that must be performed now as part of MNE configuration before the first run of any admin wizard. (Some are optional and apply only in particular circumstances, as noted following.)

Consider also whether the MNE Self-Service Desktop Migrator (SSDM) will be used as part of your Migration Plan. If so, it should also be installed and configured.

- IMPORTANT:** Remember also that any antivirus software on the admin workstation must be configured to *not* scan the Quest program files directory or `%temp%` directory, or may simply be turned off prior to running any Quest admin application. (Although it may be restored after the program runs.) Migrator for Notes to Exchange program calls will not succeed if an antivirus scan tries to "clean" an Migrator for Notes to Exchange temporary file that it misinterprets as a threat.

Configure SQL server DB and Migrator for Notes to Exchange default settings

Most of the features and wizards of Migrator for Notes to Exchange require access to information stored in a central database on the SQL server. Most also require access to the Notes server, the Exchange server, Active Directory, and the Shared Directories that contain the Self-Service Desktop Migrator and its log and status files, and admin application log files. The features and wizards therefore need to know the names, locations, configuration options, access credentials and so forth for the various servers.

These *Default Settings* should be entered now into the Notes Migration Manager (the MNE console), before other program features or the wizards are used, so that the information will be available to them and need not be entered again. If the information is not entered now, upon installation, the features and wizards will prompt for the values as needed, and most of them will have to be entered more than once—reentered for each feature and wizard that needs them.

- NOTE:** Quest recommends you visit all five of the *Edit Default Settings* screens in the Notes Migration Manager now to enter this information. The Notes Migration Manager is described in chapter 1 of the Migrator for Notes to Exchange *Administration Guide*.

Configure the Task Scheduler for an Office 365 migration

The Migrator for Notes to Exchange tasks (program runs) are defined by wizards, most of which also let you schedule tasks to run at particular times on particular days. The *Manage Scheduled Operations* screen in Notes Migration Manager lets you revise these task-execution schedules. But the wizards and *Manage Scheduled Operations* screen manage only the scheduling of task runs as these schedules are saved in the SQL database, and a "scheduled" task does not execute by itself. Tasks are executed by the Migrator for Notes to Exchange's Task Scheduler utility, as described in this section.

Scheduled tasks are executed using a separate command-line application called the Quest Migrator for Notes to Exchange Task Scheduler (*qsched.exe*) which is located in the installation directory. The program regularly checks the SQL database to see whether any tasks have been scheduled to run since the last check, and then executes the tasks at their scheduled times.

The task scheduler runs as a Windows service and is automatically installed when you install Migrator for Notes to Exchange. You can manage the task scheduler as you would any other Windows service using the Windows Service Manager. Instructions for configuring a Windows service can be found at: [http://msdn.microsoft.com/en-us/library/ms681921\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/ms681921(v=vs.85).aspx).

For more information about configuring and using the task scheduler, see the section titled Using the Qsched.exe task-scheduling utility in the *Migrator for Notes to Exchange Administration Guide*.

Mandatory parameter for Office 365 licensing

The Data Migration Wizard reads a mandatory program parameter to get the two-character *Usage Location* code that Microsoft requires for its Office 365 licenses (per [this Microsoft article](#)). Be sure to set this value, in Migrator for Notes to Exchange Global Defaults or Task Parameters, before you try to License users:

```
[Exchange]
O365UsageLocation=<xx>
```

The parameter value is a two-letter keyword, which must conform to the standardized values listed for [ISO 3166-1-alpha-2](#).

Configuring Migrator for Notes to Exchange performance for migration to Office 365

Migration to Office 365 uses the Internet to transport data, which is typically slower and less reliable than local network connections. Migrator for Notes to Exchange offers several parameters to minimize timeouts when data transmission delays are encountered during a migration.

Quest recommends you set these parameters as detailed below.

MAPI error retry features for Migrator for Notes to Exchange-exchange connections

Migrator for Notes to Exchange lets you configure the Data Migration Wizard to retry MAPI calls to Exchange and/or Office 365 when issues occur. In some environments, MAPI communications/connectivity can be occasionally interrupted, which may lead to incomplete migration results. This feature controls MAPI retries when certain errors are encountered.

When using the default Quest MNE MAPI/HTTP library, the MAPI error retry feature has been simplified. When using the legacy Outlook library, there are more parameters to configure. For information about when to use the Outlook MAPI/HTTP library, see the parameter `[Exchange] UseMneMapiHttpLib` in the *MNE Program Parameters Reference Guide*.

The retry algorithms for both libraries are described in the following sections.

Quest MNE MAPI/HTTP library

The feature is configured by the `MessageRetryWait` parameter in the `[Exchange]` section of Task Parameters and Global Defaults:

If MNE encounters a MAPI API function that fails with a network or session connection related error, it attempts to recover using the following algorithm:

- 1 If a network communication error occurs when sending the MAPI/HTTP request to the server, the request will be sent again after a short delay.
- 2 If, after several attempts, the request still cannot be sent to the server, or if the error is more serious and cannot be resolved by simply resending the request, the existing MAPI/HTTP session will be closed.
- 3 MNE will attempt to open a new MAPI/HTTP session after pausing for a period of time specified by the `MessageRetryWait` parameter.
- 4 If MNE is able to open a new MAPI/HTTP session, it attempts to store the migration object again (such as message, task, folder, contact, etc.).
- 5 If a network communication issue prevents MNE from opening a new MAPI/HTTP session, MNE will try again after pausing for the period of time specified by the `MessageRetryWait` parameter. MNE will continue to attempt to reopen the session until the session has been successfully opened, or until the user cancels the migration.

Outlook MAPI/HTTP library

The feature is configured by the following program parameters in the `[Exchange]` section of Task Parameters and Global Defaults:

- `MAPIRetryCount`
- `MessageRetryCount`
- `MessageRetryWait`
- `MaxSessionReconnectCount`

If MNE encounters a MAPI API function that fails with a network or session connection related error, it attempts to recover using the following algorithm:

- 1 If a MAPI call fails, the API call is made again after pausing for the number of seconds specified by `MessageRetryWait`. MNE keeps retrying for a maximum of `MAPIRetryCount` times.
- 2 If MNE cannot recover from the MAPI error by simply repeating the API call within the maximum number of retries, it attempts to close the MAPI session and open a new one.
- 3 If the attempt to open a new MAPI session fails, MNE waits for the number of second specified by `MessageRetryWait` and tries opening a new session again. MNE keeps trying to reconnect for a maximum of `MaxSessionReconnectCount` times.
- 4 If MNE cannot reconnect within the maximum number of reconnect attempts, it aborts the migration.
- 5 If MNE was able to open a new MAPI session (in step 2), it attempts to store the migration object again (i.e. message, task, folder, contact, etc.).
- 6 MNE attempts to migrate each object using the algorithm above up to a maximum of `MessageRetryCount` times. If MNE reaches the `MessageRetryCount` limit, it assumes that there is something wrong with the object itself and it proceeds to the next object to be migrated.

Logging

For both the Quest MNE MAPI/HTTP library and the Outlook MAPI/HTTP library, depending on the **Log level** set in the *Specify Run Information* screen, retry attempts may only appear in the program logs without any other documented errors or warnings.

Specific to migrating using the Outlook MAPI/HTTP library

For the Outlook MAPI/HTTP library, the default settings tell the wizard to retry a MAPI call that returns the error 80040115 or 80040125, to a maximum of three attempts at 10-second intervals.

i | **IMPORTANT:** If you set the `MessageRetry` parameters to values higher than the defaults, consider adjusting the `WatchDogMinutes` parameter as described in the next **Important** note that follows.

WatchDogMinutes parameter

In the Migrator for Notes to Exchange *Global Defaults*, the `WatchDogMinutes` parameter:

```
[General]
WatchDogMinutes=180
```

... specifies the number of minutes of inactivity an Migrator for Notes to Exchange Wizard will wait before it concludes that a data connection has encountered a fatal error and aborts the process. Migration to hosted platforms often generates more process timeouts than migration to a local server. This can cause problems particularly when migrating quantities of large messages (usually due to large attachments). Quest recommends using the default `WatchDogMinutes=180` for connections to Office 365, to make the migration program "forgiving." A substantially lower setting of `WatchDogMinutes=30` might be better suited to migration to a local server, where shorter and higher-quality transmission paths make timeouts less common.

i | **IMPORTANT:** If you set the `MessageRetry` parameters to values higher than the defaults, consider adjusting the `WatchDogMinutes` parameter. Quest recommends you set `WatchDogMinutes` at the greater of: its 180-minute default, or a setting of 10 minutes for every 30 seconds of retry waiting (`MessageRetryCount x MessageRetryWait`).

If you still encounter timeouts with a higher `WatchDogMinutes` value, you can disable the feature by setting `WatchDogMinutes=0`. Be careful with this option, however, because it tells the program to wait indefinitely for activity, rather than reporting a fatal error after some period of time.

Configure *SetUserAccountControl* and *UserAccountControl*



Conditional Substep: This substep applies only if you will provision Office 365 from a local AD.

In Migrator for Notes to Exchange's *Global Defaults*: If you intend to provision Office 365 from a local AD (only), Quest recommends you set these parameters as suggested here:

```
[Active Directory]
SetUserAccountControl=1
UserAccountControl=512
```

Configuring Migrator for Notes to Exchange to accommodate O365 Wave 15 throttling



Conditional Substep: This substep applies only if you are migrating to Office 365 Wave 15.

The 4.7 release of Migrator for Notes to Exchange improved support for Microsoft's PowerShell throttling in O365 Wave 15, and introduced two new program parameters pertaining to PowerShell connections for Wave 15. If you are migrating to O365 Wave 15, you can improve Migrator for Notes to Exchange performance by setting these two parameters in the new [PowerShell] section of Global Defaults and Task Parameters:

- **Configurable limit for PowerShell connections:** This parameter lets an admin specify a per-server limit for the number of concurrent PowerShell connections Migrator for Notes to Exchange can open. For example:

```
[PowerShell]
MaxPowerShellConnections=2
```

The parameter should be used to eliminate the possibility of Migrator for Notes to Exchange exceeding the *PowerShellMaxTenantConcurrency* allowed by Microsoft for the tenant. The default for this throttle is 9 simultaneous runspace connections (remote PowerShell). To calculate the recommended setting for *MaxPowerShellConnections*:

R / S

... where *R* is the number of simultaneous runspaces allowed by your tenant (9 by default), and *S* is the number of migration servers you will use. If the quotient is not a whole integer, round down to the next lower whole integer for the *MaxPowerShellConnections* parameter value. For example, if your limit is 9 runspaces and you intend to use one migration server, then $9/1 = 9$, and *MaxPowerShellConnections=9*. Or for a 9-runspace limit with 2 migration machines: $9/2 = 4.5$, so *MaxPowerShellConnections=4*.

The default *MaxPowerShellConnections=0* is interpreted as "no limit," effectively turning off this limiting feature.

- **Configurable "wait" for idle remote PowerShell connections:** This parameter lets an admin specify how long (in seconds) Migrator for Notes to Exchange will hold open an idle remote PowerShell connection before closing it. The default:

```
[PowerShell]
IdleConnectionTimeoutSeconds=30
```

... will be suitable for most environments. Note that this feature applies only to the duration of an idle state during a connection. Each command execution resets this timer to zero, so a series of commands with only short idle periods between commands could keep the connection open indefinitely.

IdleConnectionTimeoutSeconds=0 would tell Migrator for Notes to Exchange not to wait (wait 0 seconds) for a second command after a first, so every PowerShell connection would close immediately after only one command.

Prepare *customattrs.tsv* file to migrate Notes custom attributes



Conditional Substep: This substep applies only if you intend to migrate Notes custom attributes.

A Notes message contains several standard attributes such as the *From*, *To* and *Subject* fields, and can also include user-defined fields. Migrator for Notes to Exchange's Data Migration Wizard and SSDM can migrate custom Notes attributes from email messages and Notes contacts to unused properties in Exchange, but only if the migration app knows which properties in the target correspond to which attributes in the source. The migration of custom attributes therefore requires that someone map these source-to-target attribute associations in a *tsv* data file, before the migration, so the migration apps can refer to that file to migrate the attributes.

This mapping file must be a unicode (not ANSI) file named *customattrs.tsv* in the default installation folder for the Data Migration Wizard (typically *C:\Program Files\Quest\Migrator for Notes to Exchange*), and also in the folder containing *notesdtapp.exe* if you want to migrate Notes custom attributes via the SSDM. Either or both migrator applications can refer to this file to map the source attributes to free (unused) properties in the MAPI target mailboxes.

Migrator for Notes to Exchange installs a unicode *attrs.tsv* file, with the same column headings required for *customattrs.tsv*, that you can use as a template to create the *customattrs.tsv* file.

To create and prepare the *customattrs.tsv* file

- 1 Use a text editor to open *attrs.tsv*, and save the open copy under the new name *customattrs.tsv*. Make sure you save *customattrs.tsv* as a unicode (not ANSI) file, in the folder(s) as noted above, and delete any data rows that may appear in the copy.
- 2 Enter a data row for each custom attribute you want to migrate, like this:
 - **ID:** Name of the custom attribute—a unique string that distinguishes this row's custom attribute from all others in the file.

i | **IMPORTANT:** If any data row(s) remain in the original *attrs.tsv* file, make sure that no **ID** value in *customattrs.tsv* is the same as any **ID** value in *attrs.tsv*. *Custom attributes will not migrate correctly if any ID value appears in both files.*

- **SourceProperty:** Name of an attribute that has been added to a Notes mail message or a Notes contact, to be migrated to a property in Exchange.
- **TargetPropertySet:** The GUID for the target property set, which must be one of these values:

```
PS_PUBLIC_STRINGS
{hhhhhhhh-hhhh-hhhh-hhhh-hhhhhhhhhhh}
```

... where each "h" is a hexadecimal character, with letters uppercased.

If the **TargetPropertySet** value is PS_PUBLIC_STRINGS, the familiar GUID for the set named will be substituted for the string provided.

TargetPropertySet can be left blank, but in that case **TargetProperty** (see below) must be an integer property ID in the range 0x0000-0x7FFF.

- **TargetProperty:** Name of the corresponding MAPI property in Exchange. A hexadecimal user-property value will be created in Exchange on each migrated mail message or contact with the Notes property, which will hold the value. The hexadecimal values of the created properties will be reported in the log (search for "custom attr" in the log file).

If **TargetPropertySet** (above) is left blank, this **TargetProperty** value must be specified as a 16-bit integer in the range 0x0000-0x7FFF that is not already defined for some other MAPI property.

- **TargetPropertyType:** The data type of the MAPI property, which must logically correspond to the data type used in Notes. Valid values are: STRING, MV_STRING, LONG, SYSTIME, BOOLEAN.

Also, "PT_" may be prepended to any of the five types above, so valid values include PT_STRING, PT_MV_STRING, etc.

- 3 Save and close the updated *customattrs.tsv* file.

For example, a typical *customattrs.tsv* file might look something like this:

ID	SourceProperty	TargetPropertySet	TargetProperty	TargetPropertyType
Attr1	ArchivedId	{D0F41A15-9E91-D111-84E6-0000F877D428}	Archive ID	STRING
Attr2	ArchivedDate	{D0F41A15-9E91-D111-84E6-0000F877D428}	Archived Date	STRING
Attr3	SaveSetId	{D0F41A15-9E91-D111-84E6-0000F877D428}	Saveset ID	STRING
Attr4	RetentionCategory	{D0F41A15-9E91-D111-84E6-0000F877D428}	Retention Category	STRING
Attr5	HasAttachments	{D0F41A15-9E91-D111-84E6-0000F877D428}	HasAttachments	STRING

Troubleshooting problems in migrating Notes custom attributes

You can use the Microsoft *MfcMapi.exe* utility to view the property and its value, if they have been created. (The utility is a free download from Microsoft; Google "mfcmap" and visit the www.microsoft.com/downloads link.) Most problems in migrating custom attributes can be diagnosed by these quick tests:

- Verify that the target property specified in the *customattrs.tsv* file does not already exist, and that the target property is in the correct format. See [About MAPI properties](#) below for more information about this.
- Verify that the *customattrs.tsv* file is UNICODE, not ANSI.
- Verify that the last line in the *customattrs.tsv* file is followed by a line feed and carriage return (position the cursor at the end of the last line and press **Enter**).
- If any data row(s) remain in the original *attrs.tsv* file, make sure that no **ID** value in *customattrs.tsv* is the same as any **ID** value in *attrs.tsv*. *Custom attributes will not migrate correctly if any ID value appears in both files.*

About MAPI properties

A named property's name is a property-set GUID and an ID that is either a 32-bit integer or a string. A 16-bit integer alias in the range 0x8000 to 0xFFFF is assigned to the named property by MAPI. That alias is mailbox-specific.

An unnamed property's name is a 16-bit integer in the range 0x0001 to 0x7FFF. That 16-bit integer is valid in all mailboxes. Examples of unnamed properties are 0x0070 (i.e., PR_CONVERSATION_TOPIC) and 0x6656, both of which happen to be used by MAPI. So these two examples cannot be used as target property values for message attributes since they are already used, although they *may* be used to map Notes contact attributes to Exchange.

A custom property can be unnamed or named. If it is unnamed, you must select a 16-bit integer *TargetProperty* in the range 0x0001 to 0x7FFF that is not already in use by MAPI. If it is named, you can select any property-set GUID. If you select a property set that is already in use, you must choose a 32-bit integer or string ID that is not already in use in that property set. If you select a brand new property-set GUID, you need not worry about IDs already in use because there will not be any.

If you want named custom properties, Quest recommends you use the PS_PUBLIC_STRINGS property-set GUID, (PS_PUBLIC_STRINGS being an alias for {00020329-0000-0000-C000-000000000046}), and use string IDs with a prefix that is unique to your application (like "Quest-").

Step 5 (if mail routing by domain differentiation): Configure mail routing domain for Exchange



Conditional Step: This step applies only if you will configure email coexistence by temporary routing domains (domain differentiation in DNS) during the migration. If you will instead use smart hosts for mail routing (or will not configure mail routing at all), skip ahead to step 6.

Whether implementing SMTP mail connectivity only or complete coexistence with Quest's CMN, most migrating organizations use temporary SMTP domains to route traffic between Notes and Office 365. Other admins prefer to configure SMTP mail routing with smart host servers, for single-namespace environments. In either case, the routing method must be configured at both the server and user levels. At the user level, Notes person documents

and AD object records are configured later in this procedure, when provisioning the target AD and synchronizing the two directories.

If you will use subdomains for mail coexistence, configure the servers now as described below. If you will instead use smart hosts for mail routing, you can skip this step, since you will configure the smart hosts in step 15 below.

To configure distinct domains for mail routing:

The routing domains may be subdomains of the primary domain (e.g., *notes.domain.com* and *exchg.domain.com*) or completely separate SMTP domains. As long as they are unique to the respective mail systems and resolvable (via DNS or host files), they will suffice for routing. To configure routing domains:

- 1 If appropriate SMTP domains are not already available, create them in DNS. One should direct traffic to Exchange (e.g., *exchg.domain.com*). Mail sent to the Notes mailboxes of migrated users will be forwarded to the corresponding mailboxes in Exchange using the *exchg.domain.com* domain. The other SMTP domain (e.g., *notes.domain.com*) will be used for connectivity back to Notes.
- 2 After configuring the new *exchg.domain.com* domain in DNS, configure Exchange to accept the SMTP domain, and create a recipient policy to generate appropriate secondary SMTP addresses, so all Exchange users will be able to receive mail at this domain.
- 3 Configure Notes to accept mail to the new *notes.domain.com* SMTP domain/address.
- 4 Remember to verify the new domains by testing mail flow.

Step 6 (only for coexistence with Quest's CMN): Install and configure CMN components



Conditional Step: This step applies only if you will use Quest's CMN for directory, email and/or free/busy coexistence during the migration. If you will migrate without CMN coexistence, skip ahead to step 7.

Refer to Quest's *CMN User Guide* to install and configure the desired components: Directory Connector, Mail Connector, and/or Free/Busy Connector.

Remember to verify your CMN configuration by testing mail flow.

Free/busy coexistence with Office 365

Exchange cannot route a free/busy query to Domino for a user who already has an Exchange mailbox. Exchange can route such queries only to its own Exchange mailboxes. This Exchange free/busy limitation is explained in greater detail in chapter 1 of this *Scenarios Guide* (see the [Provisioning and mailbox creation](#) topic under [Migration to Microsoft Office 365](#)).

The chapter 1 reference above describes a method of provisioning Office 365 that can preserve both Exchange-to-Notes free/busy queries and Exchange-to-Notes mail routing.

Directory coexistence with Office 365 and a local AD

Microsoft restricts access to its hosted AD, and these restrictions prevent CMN's Directory Connector from supporting directory coexistence directly between Domino and Office 365. But if you have a local AD, you can establish a "two-step" coexistence between Notes and Office 365, as follows:

- 1 Configure the CMN Directory Connector for bidirectional updates between Notes and a local, proprietary Active Directory.
2. Configure Microsoft AD Sync tool to synchronize the local AD with Office 365.

The combination of the two, run sequentially, would configure an effective directory coexistence between Domino and Office 365.

Most organizations will perform a directory synchronization as part of the process to provision a local proprietary AD (in a later step, if you intend to provision Office 365 from a local AD), and CMN's Directory Connector is particularly well suited to that purpose.

Step 7: Discover Notes information

Migrator for Notes to Exchange needs to know the location of the Notes Address Books (NABs) that will serve as data sources for the Directory Export Wizard in the next step below. Migrator for Notes to Exchange also needs to know the Internet domains that will be used to generate users' SMTP aliases. Migrator for Notes to Exchange therefore includes Wizards to search through your Notes environment and return the necessary information:

- **NABs Discovery Wizard:** Locates available NABs and lets you specify the ones to be exported.
- **Internet Domains Discovery Wizard:** Identifies associated Internet domains.

Run these two Wizards now, to prepare for the Directory Export Wizard in the next step below. See the *NABS Discovery Wizard* and *Internet Domains Discovery Wizard* chapters in the Migrator for Notes to Exchange *Administration Guide* for full information.

Step 8: Export Notes directory data

Migrator for Notes to Exchange's Directory Export Wizard extracts user and group data from the Notes environment and populates Migrator for Notes to Exchange's SQL database and other data files with this information. Other Quest applications require this data for input values. Run the Directory Export Wizard now to capture the necessary information. For more information and complete operating instructions for the Directory Export Wizard, see the *Directory Export Wizard* chapter in the Migrator for Notes to Exchange *Administration Guide*.

Step 9: Review and (if necessary) modify the exported data

The data captured by the Directory Export Wizard provides critical input to other Migrator for Notes to Exchange programs, so it is important to verify that the information is accurate and properly formatted. This verification step also provides an opportunity to update addresses and other attributes as necessary before initiating migrations. For example, the content may be modified to facilitate the organization's consolidation to a new SMTP domain as part of the migration process.

If you will provision the hosted AD from a local AD: It is important to verify the matching criteria for the object-merge process (to occur in a later step). A unique matching attribute is required to match each Notes user to the corresponding security object in AD. A matching attribute may already be available, or a custom attribute can be populated in the Domino Directory and extracted, or a matching attribute can be populated into Migrator for Notes to Exchange's SQL database via TSV export/import.

If mail-enabled users already exist in a local proprietary Active Directory: Make sure the address listed in the exported *TargetAddress* column is appropriate. With existing mail-enabled users, Migrator for Notes to Exchange uses the *TargetAddress* to locate the AD object for mailbox creation. The value of the *TargetAddress* in the SQL database must therefore match a valid SMTP address on the target mail-enabled object. Also, the *TargetAlias* addresses will be applied as secondary/proxy addresses, so it is important to verify them before proceeding.

Step 10: Define user collections

Many of the Migrator for Notes to Exchange Wizards are applied to particular user *collections*: user-defined subsets of the total universe of Notes users to be migrated. For example, in the batch migration of users by

Migrator for Notes to Exchange's Data Migration Wizard, the user batches are defined by Migrator for Notes to Exchange collections.

User collections can come in all sizes, from a single user up to the entire universe of users all in a single collection. Collections typically number a hundred or so users per batch when migrating to a local proprietary Exchange, but often are much smaller when migrating to Office 365. The Migrator for Notes to Exchange *Pre-Migration Planning Guide* (see *Batch vs. Per-Desktop Migration* in chapter 3) explains how target type influences the optimum number of users per collection, and why it is important to devise a grouping strategy for defining collections—to specify number of users per collection, grouping method, and migration scheduling.

Use the Collection Wizard now to define your user collections. Remember to *remove* from collections any objects that you do *not* want to provision into the target AD. Chapter 5 of the Migrator for Notes to Exchange *Administration Guide* provides instructions and application notes for the Collection Wizard.

NOTE: Remember, Notes groups (distribution lists) are usually defined and migrated separately, after all users have been migrated. The [Post-migration activities](#) at the end of this chapter include the definition of group collections and migration of groups.

Later in this process you will be able to assess per-user data volumes in the Notes source, and then adjust your collection definitions if appropriate.

Also: Define custom design classes



Conditional Substep: This substep applies only if your Notes environment uses any non-standard design classes.

Migrator for Notes to Exchange's Notes Migration Manager (the Migrator for Notes to Exchange "console") lets you identify any non-standard Notes design classes that may be associated with Notes NSF files, but that the wizards would not otherwise recognize because their names are different from the Notes-standard design classes. The *Design Classes* table in Notes Migration Manager enumerates all such non-standard design classes, and associates each design class with one or more particular data types: mail, archives, or PABs. If the Data Migration Wizard or SSDM finds an NSF file that doesn't match any of the program's default design classes for archive, mail or PAB files, the program will look at these tables to find an alternate design class, and thereby determine the file type.

If your Notes environment has any non-standard design classes, use the *Manage Design Classes* screen in Notes Migration Manager to define them now, as part of this collection-definition step. This feature is fully documented in the Migrator for Notes to Exchange *Administration Guide*, chapter 1 (see *User Collections: Manage Design Classes*).

Step 11 (if you will provision Office 365 from a local AD): Provision the local AD

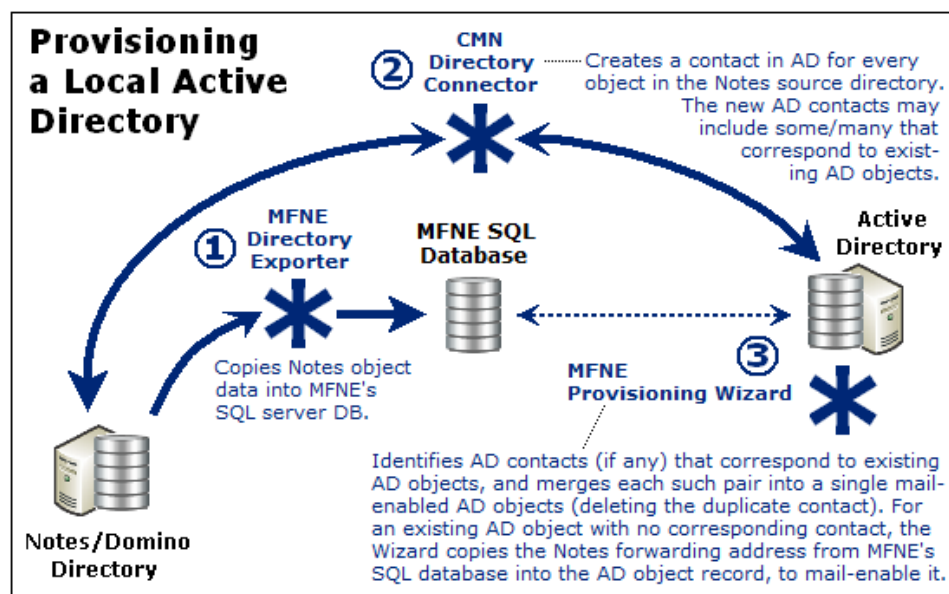


Conditional Step: This step and the next apply only if you intend to provision Office 365 from a local proprietary AD. If you are provisioning Office 365 by Migrator for Notes to Exchange or some other method, the provisioning must occur in the [Batch migration process](#) later in this chapter. For now, skip ahead to step 13.

In this step we provision only the local AD. The local AD is provisioned the same way whether your ultimate destination is a local proprietary Exchange, or Office 365 (to be provisioned from the local AD). The typical and most direct method begins with an Migrator for Notes to Exchange directory export (step 8 above), followed by a bidirectional directory update by CMN's Directory Connector, as noted in the substeps below. The illustration shows the export of Domino directory data into Migrator for Notes to Exchange's SQL server database, which precedes the CMN directory update.

This step is necessary even if you have an existing AD that is already provisioned with user objects, since the AD object records must be synchronized with the latest Notes source object records before migration begins. This step to provision the local AD also includes object merging (if necessary) by Migrator for Notes to Exchange's Provisioning Wizard, to merge any existing AD objects with the corresponding contacts created by the directory

update. The Provisioning Wizard thus eliminates the contact duplicates, leaving a single mail-enabled AD object corresponding to each Notes user you intend to migrate.



Quest recommends this process to provision a local Active Directory (after the directory export):

- 1 **Synchronize the Notes/Domino directory with the local AD.** Quest recommends using the CMN Directory Connector to perform a bidirectional update between the Domino directory and Active Directory. Other tools and methods are also possible, but CMN was designed to complement the Migrator for Notes to Exchange tools. This synchronization extracts user data from the Notes source and creates corresponding mail-enabled contacts in AD, and vice-versa, to update both directories with routing objects corresponding to the users in the other system (to establish complete directories).

If the local AD does not already contain user objects, this directory update will create them. Many organizations will already have an AD in place for network authentication, with users already provisioned as security objects. In this case the directory update is configured to create new contacts in AD, which will correspond to the existing ssecurity objects in AD. (CMN's Directory Connector can detect and merge potential duplicate entities by their addresses, but security objects that have been used only for network authentication typically do not have email addresses assigned. See the *CMN User Guide* for much more information.) If applicable, create connectors in CMN's Directory Connector, and run them to update both directories with routing objects corresponding to users in the other system.

- 2 **Run Migrator for Notes to Exchange's Provisioning Wizard** (for *all* user collections) to consolidate any contact/object duplicates in AD and mail-enable objects that were already in AD. The Provisioning Wizard merges each contact's information into the original corresponding AD object record, and then deletes the contact, leaving a single mail-enabled object in AD for each Notes user. If contacts were not added to AD for directory coexistence, the Provisioning Wizard can (without contacts) mail-enable the existing AD security principals. When no corresponding contacts exist in AD, the wizard pulls attributes and addresses from Migrator for Notes to Exchange's SQL database to mail-enable objects.

When migrating to Office 365, inbound external (Internet) email will never be routed in the Exchange-to-Notes direction (if you defer switching the MX until after all users are migrated). But the Notes addresses in AD (when synchronized up to Office 365) will be used to route internal mail from already-migrated Office 365 users to not-yet-migrated Notes recipients.

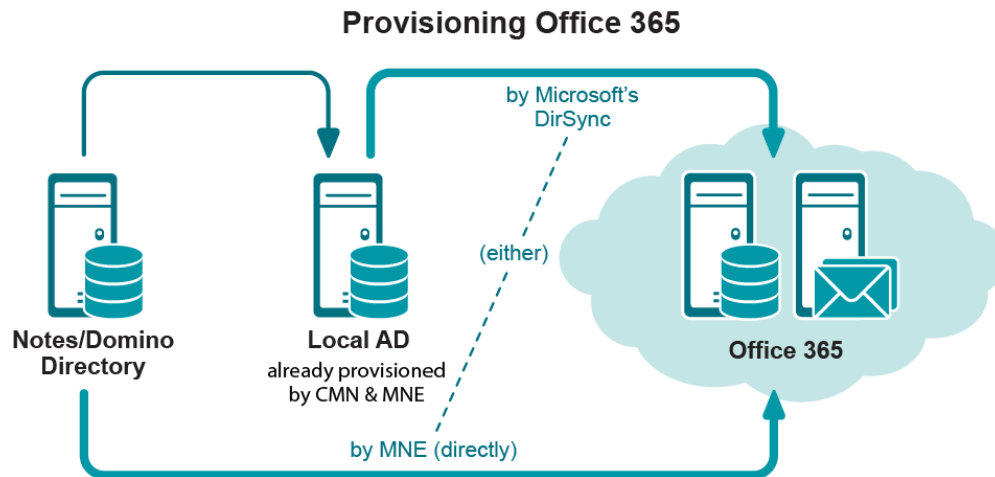
In any case, this provisioning step is still important because it consolidates contact/object duplicates (if any), and an object's address attribute will tell future CMN directory updates to not re-copy the same Notes object.

In any of these scenarios, the result is a single, mail-enabled user object corresponding to each Notes user, and the preservation of any existing security, credentials, and routing. See the Migrator for Notes to Exchange *Administration Guide* (the *Provisioning Wizard* chapter) for instructions and application notes.

- 3 **Verify Notes forwarding addresses.** Remember that a merged AD object's address attribute will tell future CMN directory updates to not re-copy the corresponding Notes object. The routing addresses should therefore be verified before continuing in this process.

Step 12: Provision Office 365 from the local AD

If  **Conditional Step:** Applies only if you are using Microsoft AD Sync tool to provision Office 365 from a local Active Directory. If you are provisioning by Migrator for Notes to Exchange or some other method, you will not provision Office 365 until the [Batch migration process](#) later in this chapter. For now, skip ahead to step 13.



Microsoft AD Sync tool copies object data from your local Active Directory up to Office 365, and can provision mail-enabled objects into Office 365 without (yet) creating mailboxes. In this step:

- 1 Run Migrator for Notes to Exchange's Data Migration Wizard to **Prepare local Active Directory accounts for MS AD Sync**. *This is a necessary administrative step that must precede your running the AD Sync tool.*
- 2 Run Microsoft AD Sync tool to provision all users in all collections into Office 365 as mail-enabled objects, *without mailboxes*. (Mailboxes will be created just prior to each user collection's migration, in the [Batch migration process](#) described later in this chapter.)

Step 13: Assess per-user migration volume

Before you migrate any users, you should have a general sense of the volume of data to be migrated by each user, and in each user collection. Migrator for Notes to Exchange offers a Notes Data Locator Wizard that finds source data stores, and determines the per-user data volumes within those stores.

Run the Notes Data Locator Wizard now to find the source data and review per-user data volumes for *all* user collections, and to verify ownership of archives and PABs prior to migration. Then **View Summaries | User and Resource Detail** to review the per-user data volumes, and modify your collections (if necessary) to accommodate any unexpected or atypical data volumes. See the *Notes Data Locator Wizard* chapter in the *Migrator for Notes to Exchange Administration Guide*. The *View Summaries* features are part of Notes Migration Manager, described in chapter 1 of the *Administration Guide*.

Step 14 (if necessary): Copy end users' local data to a central location



Conditional Step: Applies only if you want to use Migrator for Notes to Exchange's Data Migration Wizard to batch-migrate data that resides on end users' workstations.

Migrator for Notes to Exchange includes several options for migrating data that resides on end users' workstations. One approach uses Migrator for Notes to Exchange's Self-Service Desktop Migrator (SSDM), which offers an optional *Silent Mode* to minimize user interaction and impact. This approach is discussed in more detail in chapter 4 ([SSDM \(per-desktop\) migration](#)) of this *Guide*.

Some scenarios, however, require central migration of local Notes PABs and archives. Migrator for Notes to Exchange's Data Migration Wizard (in the [Batch migration process](#), as described later in this chapter) can then migrate content to Exchange mailboxes, personal archives, or PST files. In that case, the program must have access to the source data. Migrator for Notes to Exchange includes a *PAB Replicator* feature to automate the process of replicating end users' PAB data to server-based NSFs or into the mail file of each user. Alternatively, users' local data could be copied to a central location by some other means.

See chapter 9 of the Migrator for Notes to Exchange *Administration Guide* for full information about how to use Migrator for Notes to Exchange's PAB Replicator.

Step 15 (if using smart hosts for mail routing): Configure smart hosts



Conditional Step: Applies only if you will use smart hosts for SMTP mail routing.

Mail coexistence is configured in both directions when migrating to Office 365. Some organizations use temporary SMTP domains to route traffic between Notes and Office 365, while others prefer to configure SMTP mail routing with smart host servers, for single-namespace environments.

If you have not configured mail routing by subdomains (domain differentiation) in step 5 above, you should now establish and configure the smart host servers for Domino and Office 365.

Either method must be configured at both the server and user levels. At the user level, Notes person documents and AD object records were configured earlier, when provisioning Office 365 and synchronizing the two directories.

The details of configuring smart-host SMTP mail routing are beyond the scope of this *Guide*, but see your Domino and Exchange documentation and online resources for more information about configuring smart hosts for those servers. In particular, see the Microsoft article [Create a Send connecto to route outbound mail through a Smart host](#).

To configure smart-host SMTP routing with Quest's CMN, both smart hosts are configured to point to the CMN server. Within CMN, one set of SMTP IN and SMTP OUT queues is configured to accept mail from Domino and deliver it to the receiving Office 365 server, while another set is configured to accept mail from Exchange and deliver it to Domino. Multiple CMN servers can be deployed for load balancing and redundancy. The *CMN User Guide* (chapter 3) explains these configurations in much greater detail.

Remember to verify your smart host configurations by testing mail flow.

When the pre-migration preparations are complete ...

When you have completed the pre-migration preparations as described in this chapter, go on to the [Batch migration process](#) below, and/or see chapter 4 for information about [SSDM \(per-desktop\) migration](#).

Batch migration process

Migrator for Notes to Exchange includes two migration engines:

- The **Data Migration Wizard** migrates batches of users simultaneously, performs important administrative functions (mailbox creation, routing updates, etc.), and also migrates public distribution lists.
- The **Self-Service Desktop Migrator** (SSDM) runs in memory on end users' local workstations and migrates content for one user. SSDM streamlines the process of migrating local content, reduces burden on the migration team, and includes a *Silent Mode* to minimize end user interaction and requirements.

Either migration engine can be used independently for the entire data migration, or the two may be used together to meet a variety of project requirements, as discussed in the *Pre-Migration Planning Guide* (see the *Batch vs. Per-Desktop Migration* topic in chapter 3).

This section provides process instructions for the batch-migration portion of a migration to Office 365, where an administrator uses the Data Migration Wizard to perform the migrations for multiple batches (Migrator for Notes to Exchange *collections*) of users. [SSDM \(per-desktop\) migration](#), described in chapter 4, may also be part of your Migration Plan.

i | **NOTE:** Do not begin this batch-migration process until you have completed all of the [Pre-migration preparations](#) described earlier in this chapter.

The flow chart below summarizes the batch-migration process for an Office 365 target. The step numbers in the flow chart correspond to the step numbers in the narrative process instructions that follow.

This batch-migration procedure is **repeated for each user collection** to be migrated, as shown by the looping arrow in the flow chart.

i | **NOTE: Remember,** Notes groups (distribution lists) are typically migrated separately, after all users have been migrated. The [Post-migration activities](#) described at the end of this chapter include the migration of groups.

Step 1 (optional): Re-run directory connectors



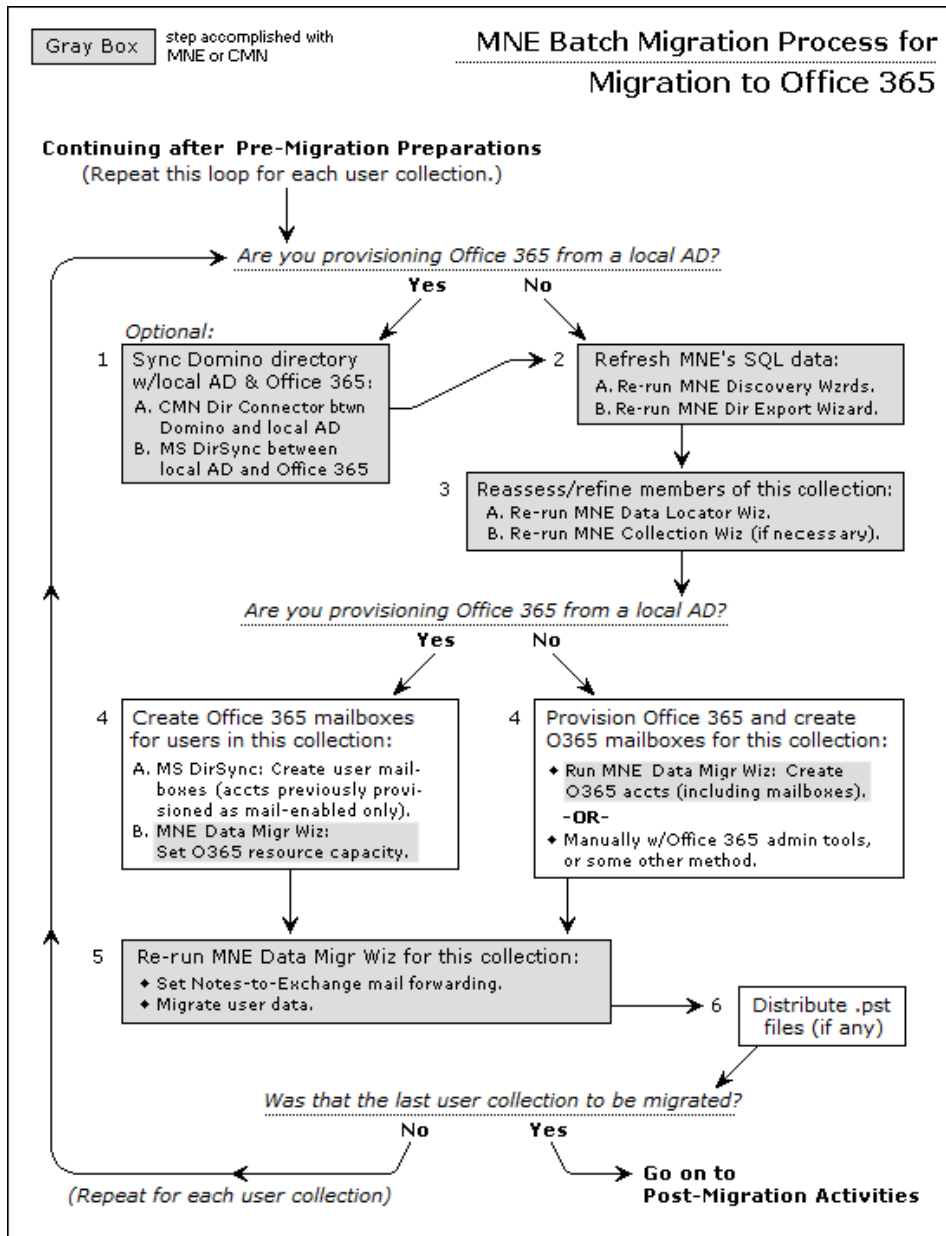
Conditional Step: Applies only if you provisioned Office 365 from a local AD, and used Quest's CMN when provisioning your local AD, in which case this step is optional but recommended. Otherwise, skip ahead to the next step below.

Many organizations experience staff additions and departures during a migration transition period, and employees move from one office to another or are promoted or reassigned. Any directory changes that occur during the migration project, after the initial directory updates in the *Pre-Migration Preparations*, may introduce data inconsistencies between the source and target environments. These can be reconciled using this "two-step" directory update between Domino and Office 365:

1. Configure the CMN Directory Connector for bidirectional updates between Notes and the local Active Directory. (See Quest's *CMN User Guide*, the *Directory Connector* chapter, for full details.)
2. Configure Microsoft AD Sync tool to synchronize the local AD with Office 365.

Both CMN's Directory Connector and Microsoft AD Sync can be configured to automatically run directory updates at scheduled intervals. However, you should also run directory updates manually at this step to ensure the directories are consistent just prior to migrating each collection.

i | **NOTE:** An object that is synched to Office 365 with *proxyAddresses* will lose the *proxyAddress* upon the next sync if the UPN is changed to match the Office 365 login—which disables mail routing from Domino to Exchange.



Step 2: Refresh Migrator for Notes to Exchange's SQL data

To make sure your target Exchange will be provisioned with current object data, update the information in Migrator for Notes to Exchange's SQL database before migrating each user collection. If you have updated the directories in the preceding step (optional), this process will also relay all directory changes into the SQL database. To update the SQL server database:

- 1 Re-run Migrator for Notes to Exchange's NABs Discovery Wizard and Internet Domains Discovery Wizard to refresh the location of the Notes Address Books (NABs) and the list of Internet domains that will be used to generate users' SMTP aliases.
- 2 Re-run the Directory Export Wizard to refresh the data in the SQL server database.

Step 3: Reassess and refine (if necessary) the membership of this user collection

The Migrator for Notes to Exchange Data Migration Wizard is applied to particular groups of users, called *collections*, which were defined in the [Pre-migration preparations](#) earlier in this chapter. Each pass through this Batch Migration Process applies these migration tasks to a single user collection.

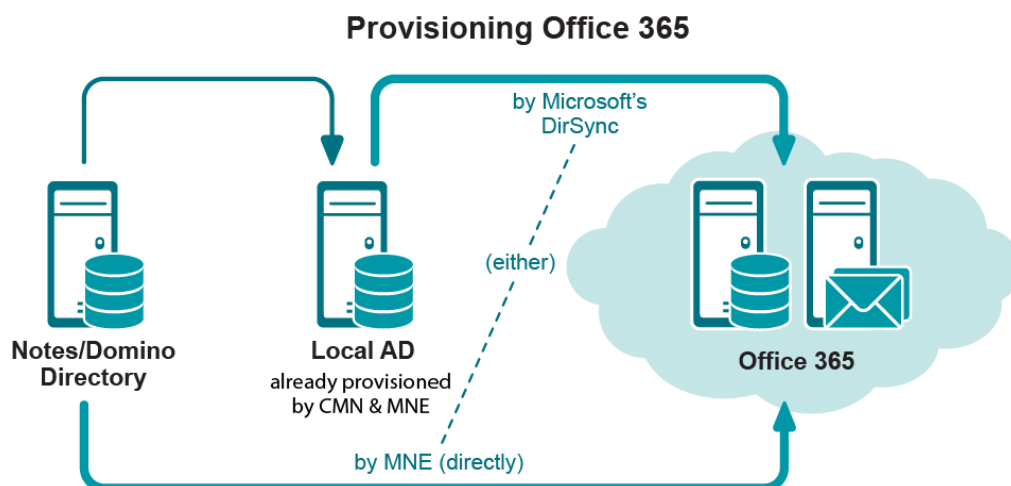
Now that you have updated your directories and refreshed your SQL data (in the two preceding steps), you should:

- 1 Re-run Migrator for Notes to Exchange's Data Locator Wizard *for this collection (only)*, and then **View Summaries | User and Resource Detail**, to reassess the per- user data volume in the Notes source for this collection. The Notes Data Locator Wizard is documented in chapter 7 of the Migrator for Notes to Exchange *Administration Guide*. The *View Summaries* features are part of Notes Migration Manager, documented in chapter 1 of the *Administration Guide*.
- 2 Reassess this collection's membership—with respect to the aggregate data volume that will be migrated with this collection's members. You may want to adjust the collection membership to better conform to your organization's grouping strategy—to take into account grouping method, optimum number of users per collection, and migration scheduling, as described in chapter 3 of the Migrator for Notes to Exchange *Pre-Migration Planning Guide* (see the *Batch vs. Per-Desktop Migration* topic).
- 3 If necessary, revisit the Collection Wizard for this collection to change its membership. Chapter 5 of the Migrator for Notes to Exchange *Administration Guide* provides instructions and application notes for the Collection Wizard.

NOTE: Remember, Notes groups (distribution lists) are typically migrated separately, after all users have been migrated. The [Post-migration activities](#) described at the end of this chapter include the migration of groups.

Step 4: Create Office 365 mailboxes

There are two different ways to proceed for this step, depending on whether you are provisioning Office 365 from a local AD (via MS AD Sync), or directly from the Notes/Domino environment.



If you are provisioning from a local AD

- 1 Run Migrator for Notes to Exchange's Data Migration Wizard and select **Prepare local Active Directory accounts for MS AD Sync**. *This is a necessary administrative step that must precede running the MS AD Sync, and must precede running the wizard for any other function.*
- 2 Run Microsoft AD Sync to create Office 365 mailboxes for the accounts in this collection, which were previously provisioned (in the [Pre-migration preparations](#)) as mail-enabled (only) objects.

- 3 Run Migrator for Notes to Exchange's Data Migration Wizard again and select **Set Office 365 resource capacity** to complete mailbox-enabling in Office 365.

Then skip ahead to step 5 of this procedure to migrate data.

If you are provisioning directly from Notes/Domino

Run Migrator for Notes to Exchange's Data Migration Wizard and select **Create Office 365 accounts** for this user collection. This feature will provision all Notes users into Office 365 **and** will create mailboxes for them.

— OR —

Provision Office 365 manually with the Microsoft online admin tools or by some other method.

Step 5: Grant the Exchange Admin account(s) Full Access rights to the created mailboxes

For MNE to connect to and write migrated content to each target mailbox, the Exchange account that is used to perform the migration must be granted Full Access rights to the mailbox. Unlike on-premises Exchange, Office 365 does not allow you to grant access at the database level. You can only grant access at the mailbox level. The permissions of each mailbox in the User Collection must be configured individually. Microsoft does not provide a method to configure permissions for a group of mailboxes in Office 365 at once.

By default, MNE checks the configured permissions of each mailbox in the User Collection at beginning of the migration. If permissions are insufficient, MNE grants the necessary permissions to perform the migration. However, Quest strongly recommends that you **DO NOT** rely on this built-in mechanism since there is a noticeable delay between granting mailbox permissions to a user and successful logins by that user. The delay before the permissions take effect is highly variable. It can be several seconds or several minutes, even as long as 30 minutes, adding unnecessary delay to the migration start.

If MNE must wait for the configured permissions to take effect, the wait time can lead to a failed migration. There is a maximum amount of time that MNE will wait for permissions to take effect, 30 minutes by default.

Quest strongly recommends that you grant the necessary permissions ahead of the scheduled migration, at least one hour before the migration start time.

Using PowerShell cmdlets to pre-configure mailbox permissions

MNE provides the following PowerShell cmdlets in the MNE PowerShell library to assist with granting permissions:

- **Add-MneMailboxAdminPermission** – Grants the Full Access rights needed to perform the migration. Run this cmdlet before the migration.
- **Remove-MneMailboxAdminPermission** – Revokes the Full Access rights. Run this cmdlet once the migration is complete.

Both cmdlets are executed within the scope of a specific User Collection, provided as a parameter when the cmdlet is executed. The cmdlets configure Full Access rights for each mailbox within the User Collection, using the configuration information stored within the MNE database (or optionally within an external configuration file provided through a cmdlet parameter). See the MNE Administration Guide for more details about these cmdlets.

If you are migrating using a pool of admin accounts, MNE grants permissions using the Role Group for the admin accounts. This ensures that MNE can access each mailbox regardless of which account in the pool is used to perform the migration.

When you perform the migration task, MNE does not know if you have pre-configured the mailbox permissions. As a result, it still takes time to verify the permissions on each mailbox within the collection. To eliminate the time taken to verify the permissions, you can also configure the [Exchange] AddFullAccessPermission INI setting to 0. Setting this parameter to 0 tells MNE that you have taken responsibility to ensure the mailboxes have the necessary permissions, and that MNE is not responsible for verification.

Step 6: Run Migrator for Notes to Exchange's Data Migration Wizard to set Notes-to-Exchange mail forwarding and migrate data

- i** | **IMPORTANT:** If you are migrating data using file system access (rather than by server access):
- Verify that all migrating users are logged off before running Migrator for Notes to Exchange's Data Migration Wizard. If the data is accessible through the Domino server, Quest recommends you use server access to locate and migrate the data. If server access is impossible or impractical, and you need to use file system access to locate and migrate the data, you must make sure that all users in the current collection are logged off the system.
 - Also, make sure the NSF file is not open in the server's cache. The `dbcache` flush command closes all files being held open by the server for users that are no longer logged onto the server. Running the `dbcache` flush command prevents the server from blocking Migrator for Notes to Exchange's access to the NSF files during the migration run.

Run the Data Migration Wizard again to:

- Set Notes-to-Exchange mail forwarding for the users in this collection.
- Migrate user data from the Domino server to the Exchange environment, for the users in the selected collection.

See the *Data Migration Wizard* chapter of the Migrator for Notes to Exchange *Administration Guide* for complete instructions and application notes.

Step 7: Distribute .pst files (if any)

If the Data Migration Wizard migrates any data to Outlook Personal Folder (.pst) files, then when the migration is complete you must either:

- Notify users of the locations of their new .pst files (so each user can specify the location within his or her own desktop copy of Outlook).
— OR —
- Distribute the newly created .pst files to users' desktops.

The Data Migration Wizard names any new .pst files using the common filename, if specified, or the specified filename format. If more than one file is generated per User ID, incremental numbers are appended to the filename. For example, *Smith.pst*, *Smith-1.pst*, *Smith-2.pst*, etc.

- i** | **NOTE:** The location of the PST files is reported in:
- The **User migration status per collection** report, available from the View Summaries screen of Notes Migration Manager.
 - The **Report Pack Report**, available from the View Report Pack screen of Notes Migration Manager.

Was that your last migration collection?

If this is *not* your last migration collection: Repeat this entire [Batch migration process](#) for the next collection. If this *is* your last migration collection, but you have more Notes users to be migrated individually by Migrator for Notes to Exchange's SSDM: See the [SSDM \(per-desktop\) migration](#) chapter in this *Scenarios Guide*.

If this *is* your last migration collection, and no users remain to be migrated by the SSDM (per-desktop) program, be sure to see the [Post-migration activities](#) below.

Post-migration activities

Step 1: Provision Notes groups into Office 365

Groups are typically provisioned separately, after all users have been migrated in the [Batch migration process](#) (the preceding section of this chapter). Since the only data associated with a group is its member list, the "migration" of a group consists only of its being provisioned into the target directory. We can use Migrator for Notes to Exchange's Groups Provisioning Wizard to provision groups either directly from Notes to Office 365, or to a local "staging" AD, from which we can then use Microsoft AD Sync tool to provision the groups from the local AD to Office 365.


Before running the Groups Provisioning Wizard, you can divide the groups into collections using Migrator for Notes to Exchange's Collection Wizard for more convenient processing. If necessary, you can update group membership and attributes in the SQL database (via TSV export and import) prior to provisioning the groups into Active Directory. For operating instructions and application notes, see the *Groups Provisioning Wizard* chapter of the Migrator for Notes to Exchange *Administration Guide*.

i | **NOTE:** Microsoft's AD Sync tool must be run twice to completely provision nested Notes groups (i.e., Group A contains Group B) in Office 365.

If you need to provision groups before all Notes users have been migrated, be sure to check the *Message Delivery Restrictions* for any Exchange group to which you want Notes users to be able to send messages. Any such Exchange group must be of the *universal* distribution type to be mail-enabled. To change settings, beginning in the Exchange Management Console:

- 1 Select the group under **Recipient Configuration | Distribution Group**, then double-click the group you want to edit.
- 2 Click the *Mail Flow Settings* tab, and highlight *Message Delivery Restrictions*, then click **Properties** above.
- 3 De-select the check box for *Require that all senders are authenticated*.
- 4 **Save**, and then restart the Exchange transport service.

Step 2 (optional): configure ongoing directory coexistence

If  **Conditional Step:** This step applies only if you will also maintain a local proprietary AD in addition to the hosted platform.

If you are going to keep a local Active Directory up and running, you can configure the Microsoft Online Services AD Sync tool to regularly synchronize the local and hosted ADs. Refer to Microsoft documentation to configure the Microsoft AD Sync tool for these ongoing synchronizations.

If you also intend to keep your Domino directory running for a time, or indefinitely, you should also configure Quest's CMN Directory Connector to regularly update the Domino directory and your local AD.

Step 3: Update mail routing

Migrator for Notes to Exchange is commonly used to automatically update mail forwarding in both systems to ensure proper routing during the migration. Migrator for Notes to Exchange can set and remove forwarding rules in both environments, as long as the mail routing domains or smart hosts are properly configured.

When the users and groups are all migrated, routing can be permanently updated to direct external incoming (Internet) mail to Office 365 instead of to the Notes environment. This step includes modifying the MX record(s) to

redirect the inbound external mail. In some environments, updating mail routing also includes updating routing tables and/or firewall modifications.

Most organizations prefer to update mail routing only after the last user has been migrated, to minimize change before and during the migration process. But the MX modification actually can occur at any time after all Notes users have been provisioned into Office 365 as mail-enabled objects. (If routing is updated to send inbound mail to Office 365 before a particular user is provisioned, there will be no forwarding address in Office 365 to relay the user's mail back to Notes.) The timing of this step therefore depends on how you provisioned Office 365:

- **If you provisioned Office 365 from a local AD using Microsoft AD Sync:** Notes users are provisioned into Office 365 as mail-enabled objects in the [Pre-migration preparations](#).
- **If you provisioned Office 365 directly from the Notes/Domino source:** Notes users are not provisioned into Office 365 until just prior to their migration, per user batch.

Step 4: Post-migration "clean up"

To "clean up" after the last user has been migrated:

- 1 **Verify the Notes server is inactive.** Make sure that the Notes server is no longer processing mail traffic or utilized for active applications.
- 2 **If you were using SMTP mail coexistence:** Delete the temporary mail routing MX domain(s) you created in the [Pre-migration preparations](#) to support routing between Notes and Office 365 during the transition. Now that all users have been migrated to Office 365 and inbound traffic is routed directly to Office 365, the temporary routing domain(s) should no longer be required.
- 3 **If you no longer need the Notes environment:** After you have verified Notes is inactive, you may take a final backup and decommission the environment.

SSDM (per-desktop) migration

- [Why and when to use the SSDM](#)
- [Before running the SSDM](#)
- [Configuring the SSDM](#)
- [Silent mode options in per-desktop migrations](#)

Why and when to use the SSDM

Batch migrations and per-desktop migrations are performed using different migration engines, both included with Migrator for Notes to Exchange. This chapter describes administrator planning for and deployment of Migrator for Notes to Exchange's per-desktop Self-Service Desktop Migrator (SSDM). For batch migration (multiple users at a time, performed by an administrator), see the *Batch Migration* sections of the preceding two chapters, for migration to a proprietary Exchange target and migration to Microsoft Office 365.

The SSDM is used by an end user, or by an administrator on behalf of an end user, to extract a single user's Notes data and migrate it to Exchange. Depending on your circumstances and preferences, you may choose to migrate some or all of your users one at a time, from each user's desktop, using the SSDM. For example, some administrators prefer the per-desktop tool to migrate user archives when the archives reside on users' individual workstations, where that option seems easier than prepping exported user data in the SQL database with per-user values for the locations of all the local archives.

Migrator for Notes to Exchange's SSDM provides a distributed migration option, which runs in memory on the user's workstation. SSDM runs from a share, offers an optional Silent Mode to minimize end user interaction, and does not install anything locally. These features can eliminate the need for desktop visits by the admin during or after the migration, although an admin can run the SSDM at user desktops if he/she chooses, perhaps selectively for only some users. The per-desktop migration option can be used for a portion of the migration (e.g., for local archives) or to migrate all of a user's data: the Exchange mailbox, PST files, or both.

Before running the SSDM

Verify all of the *Pre-Migration Preparations* are complete before the first desktop migration is performed (see the *Pre-Migration Preparations* sections of the preceding two chapters, for migration to a proprietary Exchange target or to Microsoft Office 365). These pre-migration tasks are performed just once prior to the first run of either the SSDM or Data Migration Wizard (not repeated for each run of a migration application).

If you are migrating with coexistence: An update of the exported directory data in the SQL database may be necessary if any users have joined or left the organization since the last run of the Directory Export Wizard. For the recommended procedure to update the directories and update Quest data tables, see the topic *How Do I Synchronize Directory Data and Update the SQL Server Database?* in Appendix A of the Migrator for Notes to Exchange Administration Guide.

Consider also:

- [SSDM customization options](#)
- [Verify .Net version and CAS permissions](#)

- [Distribution of SSDM program and user notifications](#)
- [If you want to run the SSDM with App-V](#)

SSDM customization options

The SSDM can be configured to behave differently in different environments, to suit different needs and preferences. The topics below explain how to configure the SSDM to suit your needs. These program customizations are accomplished by manipulating certain parameters in the *notesdtapp.ini* file, as described in full detail in the subtopics under [Configuring the SSDM](#) below.

Some SSDM customization features let you enforce or eliminate certain choices in accordance with a particular migration strategy. For example, if you intend to migrate users' server mail and address books in batches, and then use the Desktop Migrator to migrate only user archives, you can customize the SSDM to migrate only archives, and to not offer the option to migrate server mail or address books.

Verify .Net version and CAS permissions

The SSDM requires Microsoft .Net Framework version 2.0 be installed on each end user's workstation. If end users will run the SSDM application from a network share (rather than from each user's own local copy), then each user's workstation must also have either .Net 3.5 SP1 (or later) installed, or a Code Access Security (CAS) policy granting full trust to SSDM in the network share.

For the SSDM to authenticate with Office 365 using Modern Authentication, .Net 4.5 or later must be installed. If .Net 4.5 or later is not installed, the SSDM falls back to migrating without Modern Authentication.

To Add the CAS policy on an end user's workstation

If, for example, SSDM resides in a folder `\\server1\shared\SSDM\`, the necessary permissions can be granted by an administrator executing this command on the client machine:

```
%windir%\Microsoft.NET\Framework\v2.0.50727\CasPol.exe -machine
-addgroup 1 -url file: \\server1\shared\SSDM* FullTrust -name MNE_SSDM
```

For more information about *CasPool.exe*, see [this article](#) in Microsoft online technical library, and see also the Microsoft KB article: [How to determine which versions and service pack levels of the Microsoft .Net Framework are installed.](#)

Distribution of SSDM program and user notifications

If your users (rather than you or another admin) will run the SSDM, you will need to tell them where the program file is, how to prepare their desktops for the program runs, and how to run the program.

i **IMPORTANT:** Verify that all users have read-only access to the share containing *notesdtapp.exe* (the SSDM program file) and the *AddressTranslation.bin* file. The path is specified in the *Common application directory* field, on the *Shared Directories Configuration* screen in Migrator for Notes to Exchange's Notes Migration Manager. SSDM requires access to the address translation file, generated by the Directory Export Wizard, to convert addresses in messages, address books, and calendar content.

i **IMPORTANT:** Remember that any antivirus software on an end user's SSDM workstation must be configured to not scan the Quest program files directory or *%temp%* directory. Or a user may simply turn off any antivirus app prior to running the SSDM application, and then restore it after SSDM runs. You may want to provide instructions for how to turn off (and back on) your users' antivirus and desktop-search applications. If an antivirus scan misinterprets an Migrator for Notes to Exchange temporary file as a threat, it will try to "clean" the file, which will generate an error when the program call fails.

Typically an administrator will send an email to migrating users with a link to the SSDM program so each user can simply click the link in the email to launch the program. The email can also provide other pertinent information (see preceding notes), to minimize help-desk calls.

You may also include a copy of Quest's Self-Service Desktop Migrator *User Guide* (in PDF format), which explains how to operate the per-desktop program from the end user's point of view. The SSDM *User Guide* accompanies your Migrator for Notes to Exchange software. You may either copy the PDF file to a public-access folder and link to it from the same email that introduces the SSDM to your users, or simply add it to the email as an attachment.

If you want to run the SSDM with App-V

The SSDM must be sequenced in with the Outlook virtual application package. The SSDM cannot be sequenced separately, nor can it access a local Outlook install directly. The Notes client must be installed locally or also sequenced in with the Outlook package.

Also, you must edit the OSD file for *NotesDtApp.exe*. Find:

```
<VM VALUE="Win32">
  <SUBSYSTEM VALUE="windows"/>
</VM>
```

... and change the parameter value from *windows* to *console*.

Configuring the SSDM

The SSDM can be configured to behave differently in different environments, to suit different needs and preferences. The topics below explain how to configure the SSDM to suit your needs. These program customizations are accomplished by manipulating certain parameters in the *notesdtapp.ini* file, as described in full detail in the subtopics below:

- [Enabling/disabling and configuring Notes "Active Mail" processing](#)
- [Configure data destinations for different data types](#)
- [Option to track unmigrated messages](#)
- [Option to show \(or hide\) Error Log Report button](#)
- [Prepare SSDM scheduling and throttling](#)
- [Prepare for SSDM statistics collection](#)

Other SSDM customization features let you enforce or eliminate certain choices in accordance with a particular migration strategy. For example, if you intend to migrate users' server mail and address books in batches, and then use the Desktop Migrator to migrate only user archives, you can customize the SSDM to migrate only archives, and to not offer the option to migrate server mail or address books. These "silent mode" features are described in more detail below in [Silent mode options in per-desktop migrations](#).

Enabling/disabling and configuring Notes "Active Mail" processing

Active Mail processing is an optional feature that can detect and convert Notes rich-content features whereby messages carry "live" or "active" functional content. For more information about Active Mail, see *Migrating Notes "Active Mail"* in chapter 3 of Migrator for Notes to Exchange's *Pre-Migration Planning Guide*.

Migrator for Notes to Exchange's Data Migration Wizard offers the options to enable/disable and configure Active Mail processing, but in the SSDM these features are enabled and configured only by program parameters in the *notesdtapp.ini* file. Active Mail processing is disabled by default (if the parameters are omitted from *notesdtapp.ini*).

To enable and configure Active Mail processing in SSDM, set these parameters in *notesdtapp.ini*:

- **[Notes] MigrateActiveMail=<#>**
Boolean; default = 0
Determines whether Migrator for Notes to Exchange's Active Mail features are enabled (1) or disabled (0).

- **[Notes] ActiveMailTemplatePath=<string>**
String; default = <Migrator for Notes to Exchange installation directory>\ActiveMail.ntf
Specifies the full path (including filename) of the Migrator for Notes to Exchange Active Mail template file. This file provides the information necessary for Migrator for Notes to Exchange to properly process the Notes *OND* attachment and produce the Active Mail attachment file. Migrator for Notes to Exchange installs a default *ActiveMail.ntf* to the Migrator for Notes to Exchange installation directory, and that path is the default string for this parameter, but you can specify a different path
- **[Notes] ActiveMailNotificationMessagePath=<string>**
String; default = <Migrator for Notes to Exchange installation directory>\ActiveMailNotificationMessage.txt
Specifies the full path (including filename) of the Migrator for Notes to Exchange Active Mail notification message text file. The SSDM inserts the contents of this file at the top of the body of any migrated message containing Active Mail. Migrator for Notes to Exchange installs a default file, *ActiveMailNotificationMessage.txt*, to the Migrator for Notes to Exchange installation directory, and that path is the default string for this parameter, but you can specify a different path.

i | **NOTE:** The text file must be UTF-8 encoded and must contain a placeholder, called *\$ActiveMailAttachment\$*, that the SSDM will replace with the Active Mail NSF attachment when the message is migrated. Since the contents of this file become part of an RTF body, characters like "\", "{", and "}" must be escaped with a leading "\" (so they become, respectively, "\\\"", "\\{", and "\\}").

- **[Notes] ActiveMailAttachmentName=<string>**
String; default = ActiveMail.nsf
Specifies the filename you want MNE to assign to Active Mail attachment files, as it will appear in the Outlook message.
- **[Notes] ActiveMailTypes=<#>**
Integer; default = 31
Specifies which type(s) of Active Mail will be processed. The value here is the sum of the associated values of these individual types:

- Encrypted mail (value = 1)
- Stored forms (value = 2)
- Hotspots (value = 4)
- Rich markup (value = 8)
- Messages with no "Form" field (value = 16)
- Dropdown sections (value = 32)

For example, to tell the SSDM to process encrypted mail (1), stored forms (2), and dropdown sections (32), the *ActiveMailTypes* value would be 35 (1 + 2 + 32). The default value 31 tells the SSDM to process every type except dropdown sections.

Configure data destinations for different data types

In the SSDM, the destination (within Exchange) of migrated data is not selectable in the GUI, but is controlled by three parameters in the [General] section of the *notesdtapp.ini* file. Migrator for Notes to Exchange lets you specify a migration destination (within Exchange or Office 365) for each of the three primary data types to be migrated: archives, address books, and server-based data. Each type can be migrated to: users' server-mail mailboxes, or users' pst files, or to personal-archive (server-based) mailboxes.

The migration destination is not selectable in any screen of the SSDM (as it is in the Data Migration Wizard, for batch migrations), but is controlled by these three parameters in the [General] section of *notesdtapp.ini*:

```
[General]
ArchiveDest=Server
PABDest=Server
ServerMailDest=Server
```

Each parameter determines the destination of a particular data type (archives, PABs, or server mail), to be sent to the user's *server* mail or to a *pst* file.

Option to migrate encrypted messages to PSTs

The SSDM can optionally direct encrypted messages to a separate PST file, no matter how many *source.nsf* files are selected for the migration. The feature is enabled/disabled by a *notesdtapp.ini* parameter that also specifies the full filename and extension for the target PST file:

```
[General]
EncryptedPstFileName=<filename.pst>
```

In any subsequent SSDM runs, the program will preserve the earlier PST files and automatically append a digit to the designated filename to differentiate it from previously migrated PSTs (*filename.pst*, *filename_1.pst*, *filename_2.pst*, etc.).

The default is [null], which effectively disables the feature so that encrypted messages are sent to the same PST files as all other (unencrypted) migrated items.

Note that this feature is enabled only when all migrated items are directed to PSTs by:

```
[General]
ServerMailDest=PST
ArchiveDest=PST
PABDest=PST
```

If any of those item types is directed to a non-PST destination, the *EncryptedPstFileSuffix* parameter is ignored.

Option to track unmigrated messages

The SSDM can be configured to generate a folder of messages that are not migrated to the target. These items will be referenced as doclinks in a new folder in the user's Notes mailbox. The feature is enabled/disabled and configured by two program parameters in the [Notes] section of *notesdtapp.ini*:

```
[Notes]
WriteFailedMessageListToThisMbxFolder=<string>
WriteFailedMessageListClass=<keyword(s)>
```

The *WriteFailedMessageListToThisMbxFolder* parameter specifies a name for the folder to be added to the user's mailbox, to contain the unmigrated messages. *WriteFailedMessageListClass* specifies one or more types of message failures for the feature to capture; valid keyword values are: *Errored*, *Skipped* and *Filtered*. To specify more than one type, separate multiple keywords by the pipe ("|") character, as in this example:

```
WriteFailedMessageListToThisMbxFolder=FailedMessages
WriteFailedMessageListClass=Errored|Skipped|Filtered
```

This example tells the SSDM to create copies of any *Errored*, *Skipped* and/or *Filtered* messages and save them in a new folder named *FailedMessages* in the user's mailbox.

The feature is enabled by entering any value for the *WriteFailedMessageListToThisMbxFolder* parameter. (If that parameter is omitted or its value is left empty, the feature is disabled and the *WriteFailedMessageListClass* parameter is ignored.) The feature is disabled by default (*WriteFailedMessageListToThisMbxFolder* is omitted or its value is [null]), and by default *WriteFailedMessageListClass=Errored* (only).

Option to show (or hide) *Error Log Report* button

The SSDM is configured by default to offer an **Error Log Report** button that lets the user view the program log file for more information about any errors that may have occurred during the program run. (The button does not appear if no errors have occurred.) From the *Error Log Report*, a user may also save the log file or print a copy.

This feature is enabled by default, but may be disabled (so the button does not appear in any case) by a boolean parameter in the *notesdtapp.ini* configuration file:

```
[General]
ShowSSDMErrLogButton=<#>
```

Disabling the button may be useful in some environments where accessing a large log file might cause a user desktop to hang.

Prepare SSDM scheduling and throttling

Migrator for Notes to Exchange includes an SSDM Throttling Utility that lets you control users' execution of the SSDM, to more evenly distribute the demand on network and server resources. Each user collection is assigned a migration "window": a specific date and time period when its member users are permitted to migrate. When a user runs the SSDM, the program identifies the user by his or her login credentials, and checks the schedule to see whether the user is early, late, or "in the window" for his or her migration.

The SSDM Throttling Utility also lets you set a limit to the number of concurrent SSDM program runs, to prevent processing bottlenecks that might otherwise occur if too many users happened to run the SSDM at the same time. If a user's SSDM run would exceed the limit, the user is offered the option of "parking" in a waiting list, so that his or her migration program would run in the next available slot.

If you want to regulate your end users' use of the SSDM in this way, run the SSDM Throttling utility now, before you begin the migration. Chapter 14 of the Migrator for Notes to Exchange *Administration Guide* provides instructions for this utility.

Prepare for SSDM statistics collection

Migrator for Notes to Exchange includes an SSDM Statistics Collection Wizard that can be configured to gather migration statistics written by the SSDM, and load the data into the SQL database, so you can track the progress of a migration project. Each time a user runs the Self-Service Desktop Migrator, the program writes its run statistics to a specified directory. The wizard gathers those statistics and adds them to the SQL Server database, so they will appear in the *Project View* screen of Notes Migration Manager.

For information and instructions to configure the SSDM Statistics Collection Wizard, see chapter 11 of the Migrator for Notes to Exchange *Administration Guide*.

Silent mode options in per-desktop migrations

Quest's Self-Service Desktop Migrator is simple and intuitive enough that most end users will be able to run it uneventfully. Some administrators simplify the process even more by customizing the desktop program to enforce or eliminate certain choices in accordance with a particular migration strategy. For example, if you intend to migrate users' server mail and address books in user batches, and then use the SSDM to migrate only user archives, the SSDM can be customized to migrate only archives, and to not offer the option to migrate server mail or address books.

The SSDM can be customized to skip certain screens, or even to hide **all** screens—to run in a true "silent mode," requiring no entries or other intervention from the end user. Whenever the program is configured to skip a screen display, the program must have some alternate method of obtaining the information it would otherwise collect from fields on the screen. The program can read and/or infer some entry values from the operating environment—from the Windows Registry and Outlook's initialization files, etc.—and some values can be specified by parameters in the *notesdtapp.ini* file. Some values can also be specified by parameters in the *notesdtapp.ini* file, as described in the first subtopic below.

These silent-mode program customizations are optional, accomplished by manipulating certain parameters in the *notesdtapp.ini* file. If you leave those parameters at their default values, the SSDM simply runs in its default mode, displaying all screens and all options.

Multiple configurations can be established in advance of the migration to meet the needs of a variety of user types, and separate links can be distributed so that different users launch different configurations of the application. For details, see:

- [Command-line switches for running the desktop migrator in silent mode](#)
- [Configuration of silent mode in notesdtapp.ini](#)

- Providing program entry values in `notesdtapp.ini`
- Hiding entire screens from the user
- Hiding certain user choices on the Specify Data for Migration screen
- For example: to migrate archives only

Command-line switches for running the desktop migrator in silent mode

When running the SSDM in a silent mode, the program can read and/or infer some entry values from the operating environment—from the Windows Registry and Outlook initialization files, and so on—and some values can be specified by parameters in the `notesdtapp.ini` file. Some values can also be provided by command-line switches appended to the program command when the Desktop Migrator is executed. For example:

```
notesdtapp /silent /notesid "%LOCALAPPDATA%\IBM\Notes\Data\jdoe.id" /notespass <password>
```

In this list of all available switches for the `notesdtapp` command, note that the `/silent` switch is the only one that does *not* carry an argument:

- **/silent:** Enforces a true "silent" run of the program—no screen displays at all. The program will note errors in its log and may abort if it requires input data that is not made available via other switches (see below) or INI-file parameters, and that cannot be inferred from the operating environment.
- **/notesid <UserID>:** Full path and file name of user's Notes UserID.
- **/notespass <NotesPassword>:** Password associated with the **UserID** cited above.
- **/tgtprofile <ProfileName>:** Outlook profile that you want to migrate — the one into which your Notes server data, archive and/or personal address books should be placed.
- **/tgtpass <OutlookPassword>:** Password associated with the target Outlook profile cited above.
- **/tgtdomain <DomainName>:** Domain name of the target Exchange mail server.
- **/tgtuser <ADUserName>:** AD user name associated with the Outlook profile cited above.
- **/tgtmsgstore <MailboxName>:** Name of the target Outlook mailbox (if the Outlook profile cited above contains more than one mailbox).

Configuration of silent mode in `notesdtapp.ini`

When Silent Mode is configured, the migration team configures the application in advance within the `notesdtapp.ini` file to determine what will migrate, the target for each migrated data type, and the filters and other configuration elements for the migration. For example:

```
[General]
MigratePAB=0
MigrateServerMail=0
MigrateArchives=1
ArchiveDest=Server
ArchiveDestServerArchive=1
```

... tells SSDM to migrate only archives when launched by the end user and to place the migrated data in the user's server-based personal archive.

Various degrees of the *silent* option can be configured depending on the flexibility and control you want to provide to the user community. However, it is commonly configured to run as "silently" as possible, which means users are able to complete their migrations simply by entering their Notes passwords.

Providing program entry values in *notesdtapp.ini*

If the Self-Service Desktop Migrator will be configured to skip certain screen displays, the program must have some alternate method of obtaining the information that would otherwise be collected from fields on those screens. The program can read and/or infer some entry values from the operating environment—from the Windows Registry and Outlook's initialization files, for example—but some values can also be provided by parameters in the *notesdtapp.ini* file.

When an entry value is specified in the INI file, the value will appear as the default if the corresponding screen and option appear in the program run, or will simply be the prevailing value if the screen and option do *not* appear.

Migration choices in the *Specify Data for Migration* screen

Any or all of the migration choices in the *Specify Data for Migration* screen can be specified in *notesdtapp.ini* by these parameters:

[ArchiveData]	[ServerData]
MigrateArchives=1	MigrateTrashFolder=1
MigrateTrashFolder=1	
MigrateServerMail=1	
MigratePAB=1	

A parameter value of 1 sets the option to "yes" (the data type will be migrated if the screen does not appear), or sets the associated checkbox to be marked by default. A value of 0 sets the option to "no," or sets the associated checkbox to be unmarked by default. Note that if a feature is disabled by *AppDoesXxxx=0* (see [Hiding certain user choices on the Specify Data for Migration screen](#) below), the corresponding INI-file parameter will be ignored.

The most common use of these parameters is to provide the necessary entry values when the program is configured to skip the *Specify Data* screen—by *MigrateWhat=skip* or *MigrateWhat=silent* (see [Hiding entire screens from the user](#) below).

Outlook profile in the *Select Profile* screen

If the program finds more than one eligible Outlook profile on the user's computer, or doesn't find any, the program displays a *Select Profile* screen to prompt the user to designate the profile. If one and only one eligible Outlook profile is found on the user's computer, the program simply assumes it is the correct profile to use, and the *Select Profile* screen does not appear.

The end-user program can be configured to skip the *Select Profile* screen, but in that case the program must be able to determine the correct Outlook profile to use. The user's Outlook profile can be specified in *notesdtapp.ini* by:

```
[General]
SelectedProfile=<ProfileName>
```

Specifying the user's Outlook profile in the INI file will be useful only if:

- all users who will run the program with that INI file will have the same profile name (for example, some generic name like "My Profile," although each user's profile resides on his/her own local workstation and is independent of other users' profiles); or
- a different INI file is prepared for each individual user's run of the end-user program, so that individual profile names can be specified.

Remember that the program will not need this *ProfileName* value if one and only one eligible profile will be found on each user's workstation.

Outlook mailbox in the *Select Mailbox* screen

If MNE finds more than one mailbox in the selected Outlook profile, MNE displays a *Select Mailbox* screen to prompt the user to designate the target mailbox. If one and only one mailbox is found for the selected profile, MNE simply assumes it is the correct mailbox to use, and the *Select Mailbox* screen does not appear.

The SSDM can be configured to skip the *Select Mailbox* screen, but in that case (and if more than one mailbox is associated with the selected Outlook profile) the program must be able to determine the correct mailbox to use. The user's target mailbox can be specified in *notesdtapp.ini* by:

```
[General]
SelectedMailbox=<MailboxName>
```

Specifying the target mailbox in the INI file will be useful only if:

- all users who will run the program with that INI file will have the same mailbox name (for example, some generic name like "My Mailbox," although each user's mailbox resides on his/her own local workstation and is independent of other users' mailboxes); or
- a different INI file is prepared for each individual user's run of the end-user program, so that individual mailboxes can be specified.

The SSDM does not need this *MailboxName* value if one and only one mailbox will be found in the user's Outlook profile.

Archive destination folder in the *Specify Directory for Migrated Archive* screen

The destination folder (path) for the user's migrated archive can be specified in the [General] section of *notesdtapp.ini* by:

```
[General]
SelectedPstDir=<path>
```

... where <path> is the full UNC path relative to the user's computer.

This value, if necessary in a particular program run, would otherwise be specified in the Specify Directory screen.

The default for this parameter is the Outlook Default Directory, which the program can determine from its operating environment. This parameter is therefore necessary only if you want users' migrated archives to go somewhere other than the Outlook Default Directory.

Filter conditions in the *Select Date and Size Filters* screen

The Self-Service Desktop Migrator lets you specify date limits and ranges for messages to be migrated—to migrate only messages timestamped on or after (or before) a certain date, or within a particular range of dates. You can also specify a maximum size limit for attachments. These date and size filters can be specified during a program run on the *Select Date and Size Filters* screen, but that screen is hidden by default (see next section) and the filters may instead be defined by these parameter settings in the [Filter] section of *notesdtapp.ini*:

```
[Filter]
AttachSize=<####>
FirstDate=<mm/dd/yyyy>
LastDate=<mm/dd/yyyy>
```

The *AttachSize* value is numeric, in kilobytes. The two date parameter values must be entered in the eight-digit, slash-separated form shown above, with a zero preceding any single-digit month or day. The defaults for all three parameters are null, so no filtering will occur.

Hiding entire screens from the user

The Self-Service Desktop Migrator program can be customized to make some of its screen displays "silent" (invisible to the end user) or to skip a screen conditionally, making it visible only if the program cannot find the information it needs either from the operating environment or elsewhere in the *notesdtapp.ini* file. The display option for each screen can be set to one of these three parameter values in the *notesdtapp.ini* file:

- **show:** The screen will appear in every program run.
- **skip:** The screen will appear only if the program cannot read or infer the associated information either from the operating environment, or from other parameters within the *notesdtapp.ini* file.
- **silent:** The screen will not appear in any program run. The information that would otherwise be collected by the screen is instead provided by other *notesdtapp.ini* parameters, or is read or inferred from the operating

environment. If the program cannot determine the necessary information, the function will fail and the user will not be fully migrated. (This is a likely cause of any failed or incomplete single-user migration if the INI file has been modified to make one or more screens "silent.")

The **show**, **skip** or **silent** mode can be applied to each of ten program screens by setting parameter values in the [Screens] section of *notesdtapp.ini* for:

Parameter	Screen Name (In title bar)	default
Welcome=	Welcome	show
MigrateWhat=	Specify Data for Migration	show
SelectAddrBook=	Select Notes Address Books to Migrate	show
SelectArchive=	Select Notes Archive Files to Migrate	show
SelectMailFile=	Select Notes Local Mail File Replica	show
Filter=	Select Date and Size Filters	no-op*
Profile=	Select Profile	skip
Mailbox=	Select Mailbox	skip
PstDir=	Specify Directory for Migrated Archive	show
Summary=	Selection Summary	show
Progress=	Migrating Data	show
Finished=	Migration Report	show

*no-op: Functionally equivalent to "silent", but actually signifies that the parameter value is unassigned—in which case the screen will not appear in a program run.

The visibility of the *Enter Password* screen (occurs between the *Selection Summary* and *Migrating Data* screens) cannot be set or changed in *notesdtapp.ini*. This Microsoft prompt for the user's Exchange login credentials may appear if the Outlook profile is configured to require login credentials. Since this screen may be mandatory, a completely "silent" run of the program may not be possible. Even if you set all of the other screens to silent mode, the program may still have to prompt the user for his or her Exchange login credentials.

Hiding certain user choices on the *Specify Data for Migration* screen

The default display of the *Specify Data for Migration* screen lets the user migrate any combination of three types of data: server mail, archives and/or personal address books (PABs). But some administrators prefer to offer only one or two of these options. Four binary parameters in *notesdtapp.ini*, in the [General] section, can control whether or not these options will appear in the screen:

```
AppDoesArch=
AppDoesEncrypted=
AppDoesMail=
AppDoesPabs=
```

For each parameter, the default value 1 makes the corresponding option visible to the user on the *Specify Data for Migration* screen, while a setting of 0:

- Makes the option invisible (unavailable to the user) on the screen.
- Masks the portions of the *Welcome* and *Migration Report* screens that pertain to the hidden option.
- Disallows the migration of that data type regardless of other parameter settings elsewhere in the INI file (that is, would override *MigrateXxxx=1*).

If a parameter is left unspecified in the INI file, the corresponding option *will* appear on the screen.

Note that these parameters do *not* set the marked-vs-unmarked status of the corresponding checkboxes, although those status settings can be controlled by other parameters (see [Providing program entry values in notesdtapp.ini](#) above).

i | **NOTE:** If `AppDoesArch=0` or `AppDoesMail=0`, then **Include Encrypted Messages** is not displayed even if `AppDoesEncrypted=1`.

For example: to migrate archives only

In the introduction to this *How Do I Customize ...?* section we mentioned the example of an administrator who wants to migrate users' server mail and address books in batches, and then use the Self-Service Desktop Migrator to migrate user archives (only). Since the Desktop Migrator will be used to migrate archives only, the admin wants to hide the other migration options (server mail and PABs) from the user, and moreover wants to streamline the rest of the user interface to minimize its demands on the users' attention. To accomplish this in the *notesdtapp.ini* file:

```
[General]
AppDoesMail=0
AppDoesPabs=0
MigrateArchives=1

[ArchiveData]
MigrateTrashFolder=1

[Screens]
Welcome=skip
MigrateWhat=skip
SelectAddrBook=skip
SelectArchive=skip
SelectMailFile=skip
Profile=skip
Mailbox=skip
PstDir=skip
Summary=skip
Progress=skip
Finished=show
```

These parameters will configure the SSDM to run like this:

- 1 **Welcome screen:** Will not appear, because *Welcome=skip* and no user entires are requested on this screen.
- 2 **Specify Data for Migration:** Will not appear, since *MigrateWhat=skip*, and *AppDoesMail=0* and *AppDoesPabs=0*, and the program will obtain its necessary archive-migration orders from *MigrateArchives=1* and *MigrateTrashFolder=1*.
- 3 **Select Notes Address Books to Migrate:** Will not appear, because *SelectAddrBook=skip*, and *AppDoesPabs=0*.
- 4 **Select Notes Archive Files to Migrate:** Will not appear if users' archives can reside in the default location (the "archive" subdirectory under the Notes data directory), because *SelectArchive=Skip*, and the program will find archives in their default location.
- 5 **Select Notes Local Mail File Replica to Migrate:** Will not appear, because *SelectMailFile=skip*, and *AppDoesMail=0*.
- 6 **Select Profile:** Will not appear if the program finds one and only one eligible Outlook profile on the user's workstation. Otherwise, will be necessary to prompt the user to designate the profile.
- 7 **Specify Directory for Migrated Archive:** Will not appear, assuming the Outlook Default Directory is the preferred archive destination folder for every user. (If not, then specify a valid path for *SelectedPstDir* under [General], or change *PstDir=skip* to *PstDir=show*.)
- 8 **Selection Summary:** Will not appear, because *Summary=skip* and no user entires are requested on this screen.
- 9 **Enter Password** (for Exchange): May or may not appear, per user, depending on whether the user's profile requires these credentials.
- 10 **Migrating Data:** Will not appear, because *Progress=skip* and no user entires are requested on this screen.
- 11 **Migration Report:** Will appear in every run, since *Finished=show*.

So, omitting the skipped screens, and accepting the assumptions noted in items 4, 6, and 7 above, the program's screen sequence will consist of only:

- 1 **Enter Password** (for Exchange): May or may not appear, per user, depending on whether the user's profile requires these credentials.
- 2 **Migration Report:** Will appear in every program run, since *Finished=show*.

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- Download software and technical documentation.
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