

## CHAPTER 15

# Migrating from Exchange v5.5 to Exchange Server 2003

### Understanding Exchange 5.5 Migration Options and Strategies

In the past, Microsoft has taken a great deal of heat over the complexity of its migration path from Exchange 5.5 to Exchange 2000. Because of these difficulties, special consideration was given to making the process of migration from Exchange 5.5 to Exchange Server 2003 a much more structured, risk-averse approach. Consequently, a set of very well-designed tools known as the Exchange Deployment Tools was created to assist administrators with the task of migrating off Exchange 5.5. In addition to these tools, specific knowledge of the architecture of both Exchange 5.5 and Exchange Server 2003, and how they interact in a migration process is recommended.

This chapter focuses on best-practice migration from Exchange 5.5 to Exchange Server 2003. It discusses the differences between Exchange 5.5 and Exchange Server 2003, and it then details specific steps required to migrate an environment. Close attention is given to new migration techniques made available with the Exchange Deployment Tools, in addition to the more “manual” approaches to migration.

### Comparing Exchange 5.5 and Exchange Server 2003 Environments

Exchange 5.5 left a lot to be desired when it came to enterprise deployments. It was a fantastic product in small and medium-size companies and for collaboration at the

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department level. This section examines some of the ways that Exchange 5.5 was typically deployed and how its shortcomings are resolved in Exchange Server 2003. The idea behind this section is to give Exchange 5.5 architects and administrators some ideas of how they can leverage the capabilities of Exchange Server 2003. In most environments, upgrading all the Exchange 5.5 servers to Exchange Server 2003 will not be the best solution to leverage Exchange Server 2003. Some places in the environment could or should be consolidated or eliminated.

## **Detailing Design Limitations in Exchange 5.5**

Exchange 5.5 environments generally followed a distributed deployment model in which Exchange servers were placed in each remote location, typically having more than 20–30 users. This was especially true for organizations that were deployed in early Exchange deployments. This was due to several factors in the product and in the network environment.

### **Combined Administration and Routing**

Exchange 5.5 tied the hands of messaging architects by limiting Exchange designs around the site boundary. The Site in Exchange 5.5 was the boundary for administration as well as message routing. Exchange 5.5 directory replication occurs every 15 minutes within an Exchange site, and every server in a site communicates with every other server in that site. Messages also route within a site directly from the source to the destination server. Unless bandwidth was unlimited in the organization, architects had to draw site boundaries to control message routing and directory replication. Many organizations that chose a single-site design paid the price with frequent RPC message timeouts and eventually switched to a multisite design. Because message routing and administration are linked, a distributed administration model was automatically created that was an additional headache. Windows NT 4.0 didn't do a good job of providing granular administration. Anyone with administrative rights in the domain could add himself to the global group that was assigned rights in the Exchange Administrator program. This really meant that distributed message routing and centralized administration just was not possible if someone in the remote office needed to manage the Exchange server.

### **Lack of Scalability**

In Exchange 5.5 environments, scalability was usually a cap that was set based on the size of the mail and public folder server database size or the number of users supported per server. When the cap was reached, users were moved from one server to another. Mailbox limits could vary widely between organizations, from a conservative 500 users to a less conservative number of about 2,500. Many organizations capped the database size or number of users per server due to the 16GB mail and public folder store limitation of the standard edition of the Exchange server software. Even after the limitation was removed in the enterprise edition, organizations were limited in the size of the database by the amount of time offline maintenance, backup, and restore operations took on the server. The cap was then set based on the organization's comfort level with the risk of losing the

server and the amount of recovery time to get a failed server operational. Many organizations found that when they began to exceed about 30GB, the store became unmanageable.

### Small Degree of Redundancy

In most Exchange 5.5 deployments, mail servers were distributed to locations that had more than 20–30 users, an arbitrary number of users that was selected on the size and availability of WAN bandwidth, whether backup links existed, and the organization's comfort with the level of risk. This was due to the desire to provide a decent level of performance with the capability to keep mail services running in the remote location online in case of WAN failure. Redundancy was also provided through the use of multiple connector servers for foreign mail, SMTP, and OWA. Having multiple connector servers allowed one connector server to fail or have a fault; another connector server would be available to service messaging routing needs.

### Questionable Stability

In corporate locations, stability was achieved by keeping databases small and by separating public folders and message-routing services from mail-message services. Distributed services came in the form of dedicated public folder servers and connector servers such as cc:Mail connector servers, Outlook Web Access server, and SMTP bridgehead servers for Internet Mail.

## How Exchange Server 2003 Addresses Exchange 5.5 Shortcomings

Exchange Server 2003 provides the features necessary to build a more robust messaging environment. It removes many of the boundaries that tied the hands of architects and administrators in Exchange 5.5. As Exchange Server 2003 matures, the messaging designs continue to centralize, with only a portion of the services still being distributed. Exchange Server 2003 improves upon the shortcomings of Exchange 5.5 in the following ways:

- **Separate administration and routing** In Exchange Server 2003, separate routing and administration can be achieved through Routing and Administrative Groups. To fully use these new containers, the organization must be converted to Native Mode Exchange Server 2003. This requires all Exchange 5.5 servers to be converted to Exchange Server 2003 or be uninstalled from the organization. The combination of Administrative and Routing Groups with the granular permission of Active Directory helps messaging administrators better control access to the messaging services in the organization.
- **Increased degree of scalability** Scalability is provided in multiple mail and public folder databases that can be used to keep the database performance high while keeping backup and restore times low. This means that the number of users supported per server can be increased, reducing the number of servers on the network. Each database can be mounted and dismounted individually, allowing the server to continue to function with a single database offline.

- **Improved redundancy** Redundancy in Exchange Server 2003 is provided through full support of active-active clustering. Active-active clustering enables all nodes in the cluster to simultaneously service users so that organizations get the full benefit of their hardware investment while still getting the redundancy and high availability that clustering provides. Connectors in Exchange Server 2003 can also be redundant. By using SMTP for message delivery and a link-state routing algorithm, message-routing designs can be built to route messages efficiently and to take advantage of redundant links on the WAN.
- **Enhanced stability** Stability is provided within the Windows Server 2003 operating system and at the core of Exchange Server 2003 in the Extensible Storage Environment (ESE) database. Small efficient databases, redundant connector designs, and clustering technology all increase the stability of Exchange Server 2003, improving the end-user experience and letting information technology groups create service level agreements that they can stand by.

## Prerequisites for Migrating to Exchange Server 2003

Before moving the Exchange 5.5 organization to Exchange Server 2003, several items need to be addressed from a technical implementation and design standpoint. Refer to Chapter 4, “Exchange Server 2003 Design Concepts,” and Chapter 5, “Designing an Enterprise Exchange Server 2003 Environment,” for information on Exchange Server 2003 design concerns.

## Checking Current Environment with the Exchange Server 2003 Deployment Tools

The Exchange Deployment Tools are an invaluable asset to any deployment team. They are straightforward and robust, and they cover a multitude of migration scenarios. Even die-hard Exchange upgrade enthusiasts with years of Exchange 2000 migration experience under their belt can benefit from the tactical advice and safeguards built into the tools.

The Exchange Deployment Tools guide administrators through the Exchange Server 2003 migration process in a step-by-step fashion. The tools themselves can be invoked by simply inserting the Exchange Server 2003 CD (or clicking Setup.exe if autorun is disabled) and then clicking on the Exchange Deployment Tools link. The tools, illustrated in Figure 15.1, initially lead the migration team through a series of prerequisite steps.

These prerequisite steps should be followed exactly as described in the tool. In fact, the entire migration process outlined in this chapter can be followed via the Exchange Deployment Tools. In addition to running through the prerequisite steps listed in the tools, you must take several key factors into account before deploying Exchange Server 2003.

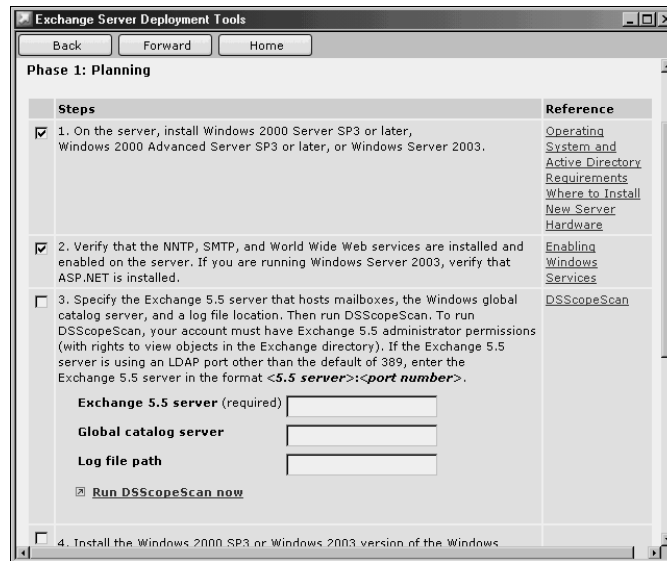


FIGURE 15.1 Exchange Deployment Tools.

## Preparing the Exchange 5.5 Organization for the Migration

When moving to Exchange Server 2003, one of the biggest items that organizations should be concerned about is that Exchange Server 2003 is a one-to-one environment. This means that there is only one Exchange Server 2003 organization per Active Directory forest. Many organizations have one or more Exchange organizations in their environment. This type of installation can result from mergers and acquisitions that were never fully meshed or breakaway lines of business that established their own organization, or it could be done by design to create an SMTP relay routing hub. In any case, only one organization can remain in Exchange Server 2003, and this organization must be chosen before the start of the migration.

### TIP

For organizations designed to support SMTP relay functions, continue to use them through the migration process and then replace them with Routing Groups. If the Exchange 5.5 relay servers are under the control of another group in the organization, place the Routing Group with the relay server in its own Administrative Group.

The second piece of the one-to-one environment that must be one-to-one is the number of mailboxes per Active Directory account. In Exchange 5.5, a Windows NT account could have an unlimited number of mailboxes associated with it. In Active Directory, the messaging components of the user account are just additional attributes of the user, so the mailbox is really part of the user account. It was quite common for Exchange 5.5

administrators to use a single account for multiple mailboxes, especially for administrative functions such as backup and virus-scanning products, and also for resources such as conference rooms. Linking the Active Directory accounts to the Exchange 5.5 mailboxes can be done either manually for a few mailboxes or for a large number of mailboxes by using the NTDSNoMatch utility, or by using the Resource Mailbox Wizard in the ADC Tools, described in more detail later in this chapter.

**TIP**

To view the Windows NT Accounts with multiple mailboxes, use the Exchange 5.5 Administrator program and run a directory export to a CSV file. In the Exchange Administrator program, select Tools, Directory Export and export all mailboxes from the Global Address List container. Open the export file in Excel and sort the spreadsheet by the Primary Windows NT account column. Scrolling through the Excel sheet reveals all of the Windows NT 4.0 accounts that were used on more than one mailbox.

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**Consolidating the Exchange 5.5 Organization**

The more items that exist in Exchange 5.5, the more items must be migrated to Exchange Server 2003. It's a given that mail database and public folder servers need to be migrated, but all the connector servers might not be necessary in the Exchange Server 2003 environment. Now is the time to rethink the Exchange design. By consolidating servers and using features such as active-active clustering, it is now possible to locate all the Exchange installations at a few central hubs on the WAN where the administrators with the best Exchange skills reside. In addition, the enhanced remote client access capabilities introduced in Exchange Server 2003 allow for site consolidation, further reducing the number of servers that must be supported. Of course, the migrated Exchange Server 2003 environment can mirror the exact same configuration as Exchange v5.5. It's just an option (and opportunity) to rethink the best configuration for the organization.

Later revisions of Exchange 5.5 introduced a utility called the Move Server Wizard that allows for the consolidation of Exchange 5.5 organizations and sites. An organization's migration can be made simpler by consolidating the Exchange sites into a single site. If the organization must remain in Mixed Mode for an extended period of time, the organization should consider consolidating into a single site before the migration process. Having a single site allows the administrators of the organization to move mailboxes and still retain flexibility with message routing. To run the Move Server Wizard, the organization must be at Exchange 5.5 Service Pack 1 or higher.

**CAUTION**

You cannot run the Move Server Wizard after you begin migrating into a mixed Exchange v5.5/Exchange Server 2003 environment. You must be in full Exchange Server 2003 Native Mode before you have a chance to rearrange and configure your Exchange Server 2003 Administrative Groups; therefore if you want to make any Exchange Organization modifications, be sure to do them *before* you begin your migration to Exchange Server 2003.

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### Foreign Mail System Connectivity

One of the biggest changes for organizations moving from Exchange 5.5 to Exchange Server 2003 regarding foreign mail connectivity is that there is no Exchange Server 2003 version of the PROFS/SNADS connector. The easiest solution to this problem is to leave a single Exchange 5.5 site behind to handle the PROFS/SNADS connectivity. The downside to this solution is that it delays the organization's move to Exchange Server 2003 Native Mode until another solution is put into place. For a long-term solution, investigate using SMTP to connect the systems, or migrate the PROFS user to Exchange Server 2003.

A second issue regarding foreign mail connectivity is that organizations might have put so much effort into getting their connectors stable and configured properly that they might not want to move their foreign mail connectors to Exchange Server 2003. As long as the organization can remain in Mixed Mode, it's okay to leave the connectors in Exchange 5.5. As with the PROFS/SNADS connector, it's better to leave all Exchange 5.5 connectors in a single Exchange 5.5 site than multiple sites. If this means moving the connector anyway to consolidate to a single Exchange 5.5 site, or if a single Exchange site doesn't make sense because of geography or WAN issues, consider moving the connectors sooner rather than later to Exchange Server 2003.

### Upgrading Service Pack Levels

To migrate from Exchange 5.5 to Exchange Server 2003, some or all of the Exchange 5.5 servers must be running at least Service Pack 3, and preferably Service Pack 4. Most organizations are already at that level, but those that are not should plan to perform the Service Pack 3 upgrade before starting the Exchange migration. Although it is wise to upgrade all, only one Exchange 5.5 server in the organization technically must run SP3—the one that the ADC replicates to.

If the organization is planning to consolidate services before migrating to Exchange Server 2003, it makes sense to postpone the Service Pack 3 upgrade until the consolidation through the Move Server Wizard is completed.

## Structuring the Migration for Best Results

When structuring the migration, the end goal is to move to the new platform without disrupting current services or losing functionality. The only way to be sure that service and functionality will not be lost during the migration is to perform lab testing. Having a fallback plan and solid disaster-recovery processes are also essential when planning the Exchange Server 2003 deployment. By breaking the migration into sections, the organization can move cautiously through the migration without making too many changes at one time. The following best practices deploy Exchange Server 2003 by migrating each service type at a time. For many smaller remote locations, this might not be feasible and all services might have to be migrated at the same time. Migrating by service type is usually the best solution for corporate sites and large remote offices.

## Single Site Exchange 5.5 Migrations

Within the same Exchange 5.5 site, administrators have the flexibility of moving users between servers. Single-site Exchange 5.5 installations become a single Administrative Group with a single Routing Group when converted to Exchange Server 2003. If granular message routing is needed, additional Routing Groups can be added and servers within the Administrative Group can be moved to new Routing Groups after the conversion to Native Mode.

Because servers cannot be moved between Administrative Groups even after the conversion to Native Mode, administrators need to examine whether a single Administrative Group will fulfill the organization's administrative needs. Additional Administrative Groups can be added to the organization, but only by installing new Exchange Server 2003 systems. Users can be moved between Administrative Groups by moving the mailbox from group to group, but only after the switch to Native Mode.

## Multisite Exchange 5.5 Migrations

Multisite migrations are a bit more complex than single-site migrations because an Exchange Server 2003 system must be established in each Exchange 5.5 site. After the first Exchange server is installed, administrators can use the **Move Mailbox method** to migrate users to Exchange Server 2003.

After the migration, the organization will contain multiple Administrative Groups with a single Routing Group in each that matches the Exchange 5.5 configuration. Even after the conversion to Native Mode, the servers in each site cannot be moved between Administrative Groups, so administrators need to examine whether this design will still work for the organization.

Understanding why the multiple sites were established might help in deciding how to handle the multiple sites. If the decision to have multiple sites was to originally delegate control of administration, the multiple Administrative Groups might still be needed. If multiple sites were implemented to control message flow and directory replication, consolidating many of the Administrative Groups might be desired.

## Multiorganization Exchange 5.5 Migrations

Multiorganization environments must consolidate to a single Exchange Server 2003 organization to migrate to Exchange Server 2003 unless the organization plans to support multiple Active Directory forests. Multiple organization environments have the following choices when moving to Exchange Server 2003:

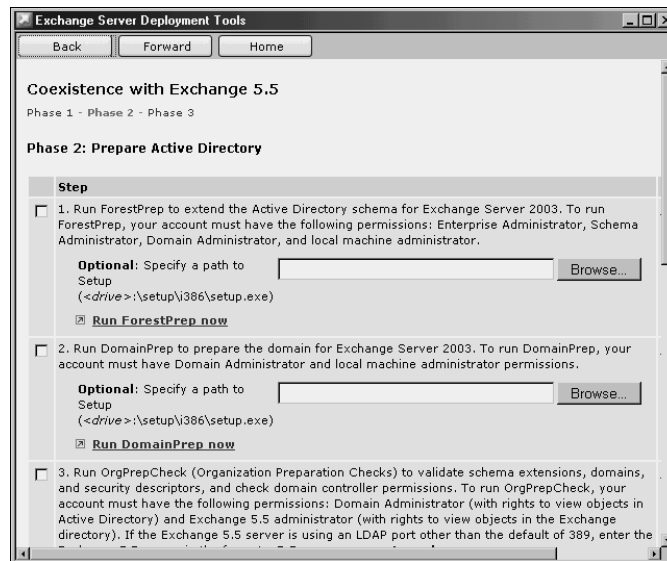
- **Select one organization to be migrated to Exchange Server 2003** Use the most heavily populated organization if it fits the company's standards. Create new Exchange Server 2003 mailboxes for users in the other organization. Use ExMerge to move user data from the abandoned organization to Exchange Server 2003.



- **Start with a clean Exchange Server 2003 organization and do not migrate either organization** Both organizations feel equal pain that might be politically acceptable. Look at the ExMerge utility to migrate user data, or run both Exchange 5.5 organizations for a short period of time and allow users to forward mail to their Exchange Server 2003 mailbox.
- **Use the Move Server Wizard to collapse one organization into the other before migrating** Use the company-standard organization for the organization to be migrated to Exchange Server 2003. Merge the other organization into it before migrating through the Move Server Wizard. No one loses mail during the migration, but it might be a hard sell politically.

## Preparing the Active Directory Forest and Domain for Exchange Server 2003

After the prerequisite steps have been satisfied, the Exchange Deployment Tools prompt the administrator to run the Forestprep and Domainprep processes. These processes can be invoked manually via setup.exe switches (/forestprep and /domainprep), or they can simply be launched via the Exchange Deployment Tools, as illustrated in Figure 15.2.



**FIGURE 15.2** Launching Forestprep and Domainprep from the Exchange Deployment Tools.

A greater understanding of what tasks these two utilities perform is crucial to understanding the Exchange deployment process as a whole.

## Extending the Active Directory Schema

To extend the Active Directory schema, Exchange Setup relies on the capabilities of the `/forestprep` switch, which can be invoked via the Exchange Deployment Tools. Running the Forestprep procedure requires that the account invoking the command have Schema Admin privileges in the schema root domain because the command extends the Active Directory schema to support the attributes that Exchange Server 2003 requires. The schema extension is quite extensive, and the changes are replicated to all domain controllers in the Active Directory forest. This might require special consideration into replication issues if the AD forest is large and spread out across slow replication links.

## Preparing the Windows Server 2003 Domains to Support Exchange Server 2003

The Active Directory domains that will host Exchange servers or mailbox-enabled users must be prepared before installing the first Exchange Server 2003 system. Prepare the Windows Server 2003 domains using the `/domainprep` switch, also invoked via the Exchange Deployment Tools. The `/domainprep` process configures the Recipient Update Service parameters, which are responsible for keeping Exchange address lists up-to-date and for creating proxy addresses for users based on recipient policy addressing configuration. In addition, it creates the Exchange Server 2003–specific groups that allow Exchange services to run without a service account.

## Verifying the Organization Settings with OrgPrepCheck

Exchange Server 2003 introduces a new utility named OrgPrepCheck to validate that the Forestprep and Domainprep utilities were functionally successful. The OrgPrepCheck utility is invoked via the Exchange Deployment Tools and is a recommended way of determining whether it is safe to proceed with the migration process.

## Installing and Configuring the Active Directory Connector

Unlike in Exchange 2000, the Active Directory Connector (ADC) does not need to be installed until after the `/forestprep` command has run. This was designed so that only a single schema extension is required for upgrading to Exchange Server 2003, as opposed to the dual-extension of Exchange 2000.

After the prompt by the Exchange Deployment Tools, the ADC can be installed. The connection agreements in ADC are necessary to synchronize directory entries between the Exchange 5.5 and Exchange Server 2003 systems. Unlike in Exchange 2000, the Exchange Server 2003 ADC can be installed on a member server and is often installed on the first Exchange Server 2003 system in a site.

Organizations can choose to implement one or more Active Directory Connectors in the organization. Implementing additional ADC connectors and connection agreements

should not be seen as a fault-tolerant solution for the ADC. The ADC should be seen as a temporary coexistence solution, with the migration being the intended end goal.

ADC installations are better off being left as simple as possible. A single ADC installed with one connection agreement to each Exchange 5.5 site is much easier to manage than multiple ADCs, all with their own connection agreements. This might or might not be possible based on the Exchange 5.5 site design and WAN layout. The ADC and its connection agreements should communicate with servers on the same network segment that will require multiple ADC installations.

## Installing the ADC

Both the Active Directory domain controller and the Exchange 5.5 server that will be joined through the Active Directory Connector should be on the same physical network segment. Schema Admin and Enterprise Administrator rights are required to install the ADC.

Plan a few days to install and configure the ADC and the connection agreements. The initial installation and configuration take only a few hours, but it generally takes a few days to work out the kinks and resolve the errors in the Application Event Log. Problems in the ADC will show up later and complicate the migration, so don't rush the ADC installation. Microsoft recommends allocating 2 hours for replicating about 5,000 objects in a single direction, but the length of time for replication really varies on the number of connection agreements, recipient containers, and populated attributes on the actual directory objects.

The ADC has the capability to delete objects in both directories, so check whether the backup media and procedures have been recently verified before configuring the ADC. The organization should be familiar with how to perform an authoritative restore through NTDSUTIL for the Active Directory database.

The first step in installing the ADC is to create or choose a user account that will be used to run the ADC service and manage the connection agreements. This account does not have to be the same account that is used in each of the connection agreements configured later in the chapter. This account needs to be added to the Administrators group in the domain if the ADC is installed on a domain controller or to the local Administrators group if the ADC is installed on a member server.

To manually start the ADC installation, insert the Exchange Server 2003 CD and select ADC Setup from the autorun menu, or simply invoke the setup from the Exchange Deployment Tools. The ADC prompts for the component selection and allows just the MMC administration snap-in to be installed or the ADC service. Select both components when installing the ADC on the server. If the ADC will need to be remotely managed, the administration component can be installed later on the administrator's workstation.

Next, the installation prompts for the path to install the ADC and the ADC service account credentials. When the installation is complete, the next step is to configure the

connection agreements to begin synchronizing the Active Directory and Exchange 5.5 directories.

## Creating Connection Agreements

Configuring connection agreements (CAs) has been the bane of many an Exchange 2000 administrator. Improperly configured connection agreements can seriously corrupt an Active Directory or Exchange 5.5 database, so it is extremely important to properly configure CAs for the migration process. Luckily, Exchange Server 2003 includes a series of ADC Tools that streamline the process of creating CAs for migration, as illustrated in Figure 15.3. After installation, it is highly recommended that you use these wizards to install and configure the CAs.

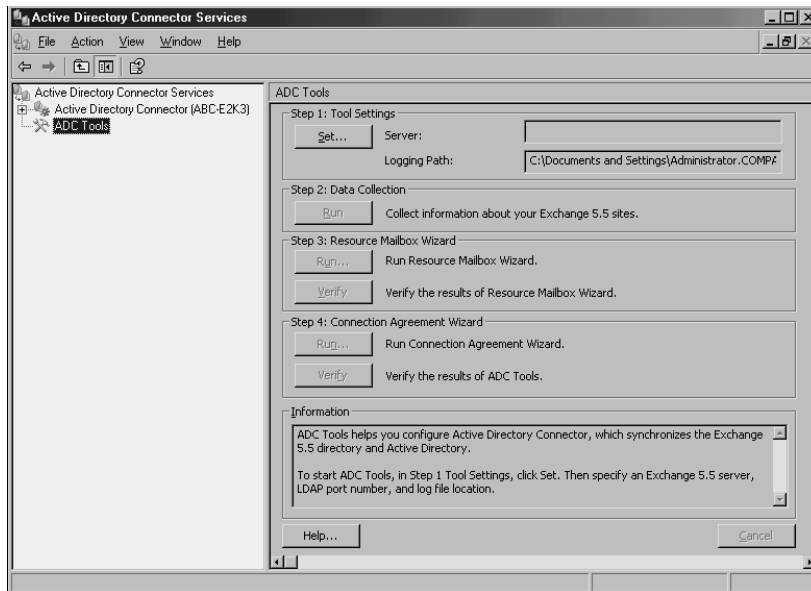


FIGURE 15.3 ADC Tools.

Two tools in particular are extremely helpful in the migration process. The first tool, the Resource Mailbox Wizard, illustrated in Figure 15.4, can help to identify users with multiple mailboxes and fix them in advance of the migration. This tool streamlines the process that the `ntdsutil` utility previously utilized.

The second tool, the Connection Agreement Wizard, walks an administrator through the tricky process of creating the connection agreements required to migrate from Exchange 5.5. The wizard helps to identify “gotchas” such as the AD domain being in Mixed Mode (it should be changed to Native Mode in advance of the migration) and other important factors. As illustrated in Figure 15.5, it automatically creates a recipient CA and a public folder CA, which can then be manually tweaked as necessary.



FIGURE 15.4 Resource Mailbox Wizard.

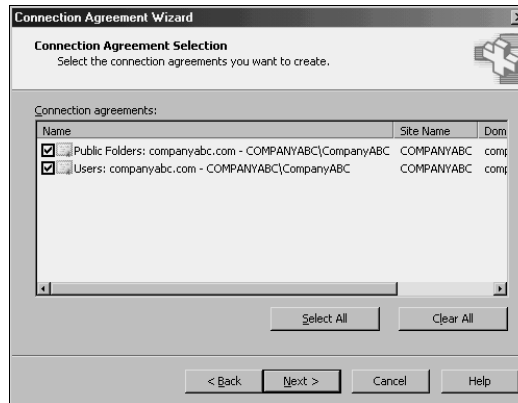


FIGURE 15.5 Connection Agreement Wizard.

After initial setup, several properties can be configured on the ADC to give the administrator more information and control over the ADC and its connection agreements. Attribute replication, account-matching rules, and diagnostic logging properties should all be configured before building the connection agreements and replicating directory entries. Even when using the default settings on the ADC, it is a best practice to prototype the ADC replication processes in a lab before attempting the synchronization on production systems.

Connection agreements are configured by an administrator who controls the type of objects that are replicated between Active Directory and Exchange 5.5. They also contain the credentials and connection information needed to connect to both systems and other attributes, such as handling deletion and what to do when there is no matching account for the mailbox in the destination directory. Connection agreements operate using two different approaches:

- **One way** Information is synchronized only one way. The connection agreement can be from Windows or from Exchange, but not from both. After the direction is selected, the opposite system's tabs and controls are grayed out.
- **Two way** Information is synchronized in both directions. This is generally the preferred method and keeps the configuration simple.

Connection agreements also need to be designated as primary or not. A primary connection agreement has the capability to create objects in the directory. A connection agreement that is not marked as primary cannot create new objects and can only update the attributes of existing objects. To ensure that objects are created, the ADC marks all connection agreements as primary by default.

### Configuration Connection Agreements

Configuration connection agreements are used for coexistence between the Exchange 5.5 and Exchange 2003 servers, and they transfer information such as site addressing and routing information between the Exchange platforms. The configuration connection agreement cannot be created manually and is created by the Exchange Server 2003 set-up program when the first Exchange Server 2003 system is installed. After the replication of the configuration information, Exchange 5.5 sites are visible in the Exchange System Manager program and are represented as Administrative Groups. Exchange Server 2003 systems are also visible in the Exchange 5.5 Administrator program.

### Recipient Connection Agreements

Recipient connection agreements are responsible for replicating mailbox, distribution list, and custom recipient information from the Exchange 5.5 directory to Active Directory. They are also used to send users, groups, and contacts from Active Directory to Exchange 5.5. Recipient Connection Agreements can be configured as one-way or two-way connection agreements. Most often a two-way connection agreement is used. Each connection agreement has its own schedule, so using one-way connection agreements might be preferred if the organization has specific requirements on when each side should be updated.

### Public Folder Connection Agreements

Public folder connection agreements are responsible for replicating mail-enabled public folder information from and to Exchange 5.5 and Active Directory. Public folder connection agreements can be configured only as two-way connection agreements. It is a best practice to create one public folder connection agreement per Exchange 5.5 site. This is true even if the organization does not mail-enable public folders. Administrators might not be aware of some folders that are mail-enabled, and it is best to create the connection agreement for each Exchange 5.5 site, to reduce the likelihood of problems with the folders during the migration.

## Configuring Connection Agreements

As previously mentioned, it is wise to allow the ADC Tools to create the necessary CAs for the migration process. If a manual CA will need to be configured, however, it can be done in the following fashion. Open the ADC MMC snap-in on the domain controller running the ADC by selecting Start, All Programs, Microsoft Exchange, Active Directory Connector. Right-click the Active Directory Connector service icon for the server and select New, Recipient Connection Agreement.

The following tabs must be populated:

- **General** Select the direction and the ADC server responsible for the connection agreement. It's usually best to select a two-way connection agreement for the primary connection agreement.
- **Connections** Enter the username and password combination that will be used to read and write to Active Directory. Next enter the server name and LDAP port number for the Exchange 5.5 server, and the username and password that will be used to read and write to the Exchange 5.5 directory. When entering the user credentials, use the format domain\user—that is, companyabc\administrator.

### TIP

To locate the LDAP port number on the Exchange 5.5 server, open Exchange Administrator and access the LDAP protocol properties under the Protocols container beneath the server object.

- **Schedule** The directory synchronization process takes place between midnight and 6 a.m. daily under the default schedule. Use the grid to modify the schedule, or select Always, which replicates every five minutes. Remember to select the check box for Replicate the Entire Directory the Next Time the Agreement Is Run to perform a full synchronization on the first run.
- **From Exchange** Select all the recipient containers in the Exchange 5.5 site to synchronize with Active Directory. Remember to select any containers that might be used as import containers for foreign mail connectors. Next select the destination container in Active Directory where the ADC will search for matching accounts and create new accounts. Select the object types to replicate, such as mailboxes, distribution lists, and custom recipients.
- **From Windows** Select the Organizational Units in Active Directory to take updates from and the Exchange 5.5 container to place the updates in. The object types to replicate are selectable for users, groups, and contacts. The check boxes for Replicate Secured Active Directory Objects to the Exchange Directory and Create Objects in Location Specified by Exchange 5.5 DN are best left blank in most instances. Click Help while in the From Windows tab for more information on these options.
- **Deletion** The Deletion option controls whether deletions are processed or stored in a CSV or LDF file, depending on the platform. If this is a short-term connection

for migration, it's usually best to mark these options to not process the deletions and store the change in a file. The CSV and LDF files get created in the path that the ADC was installed into. Each connection agreement has its own subdirectory, and the output CSV and LDF files get created there.

- **Advanced** The Advanced tab is set correctly for the first primary connection agreement and does not need to be modified. The settings on this tab should be modified when multiple connection agreements exist or when configuring the ADC to replicate between Exchange organizations. Leaving the Primary Connection Agreement check box selected on multiple connection agreements for the same containers creates duplicate directory entries. Never have the ADC create contacts unless the ADC is being used to link two Exchange organizations for collaboration purposes.

To configure a public folder connection agreement, right-click the Active Directory Connector service icon for the server and select New, Public Folder Connection Agreement.

- **General** Select the ADC server responsible for the connection agreement. The direction can be only two-way on public folder connection agreements.
- **Connections** Enter the username and password combination that will be used to read and write to Active Directory. Next enter the server name and LDAP port number for the Exchange 5.5 server, and the username and password that will be used to read and write to the Exchange 5.5 directory. When entering the user credentials, use the format domain\user—in this case, companyabc\administrator.
- **Schedule** The directory-synchronization process will take place between midnight and 6 a.m. daily under the default schedule. Use the grid to modify the schedule. Select the check box for Replicate the Entire Directory the Next Time the Agreement Is Run to perform a full synchronization on the first run.
- **From Windows** The only option available here is the check box for Replicate Secured Active Directory Objects to the Exchange Directory. This replicates objects that contain an explicit deny in the Access Control List to Exchange 5.5. Exchange 5.5 does not support explicit deny entries, so the objects are not replicated by default.

The final step is to force the connection agreement to replicate immediately. To force the replication, right-click the connection agreement and select Replicate Now. Be sure to check the Application Event Log in Event Viewer for errors during the replication process.

## Installing the First Exchange Server 2003 System in an Exchange 5.5 Site

Because there are many prerequisite tasks and processes to run, getting to the point of the actual Exchange Server setup is a watershed event. The following section double-checks

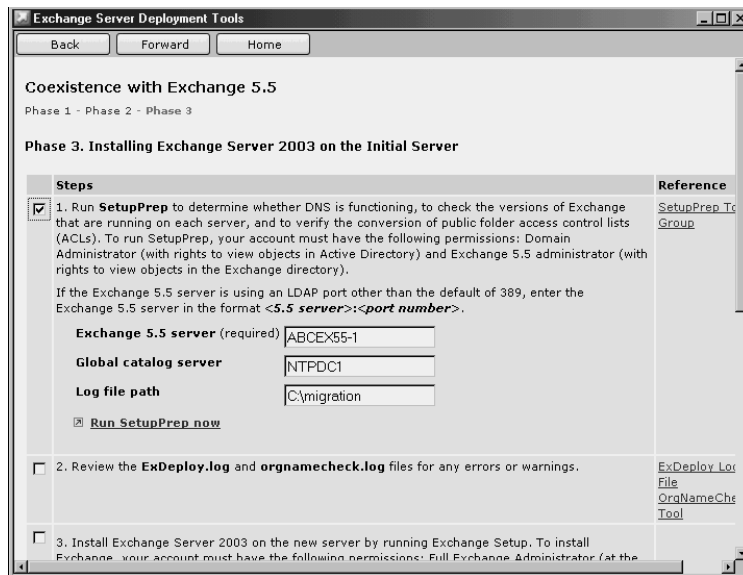


that the prerequisites have been fulfilled. When installing the first Exchange Server 2003 system, it is recommended that you use a server that has been wiped clean and has a fresh installation of Windows Server 2003. This is because the first server in Exchange holds many critical Exchange organizational management and routing master tables, and having a new, clean server ensures that the masters are created and stored on a solidly configured system.

## Installing the First Exchange Server 2003 System

The actual Exchange Server 2003 installation of the first server is quite easy after the prerequisite conditions are met. The installation takes about 30 minutes on average.

One final step before running the Exchange Server 2003 setup is to run a tool called SetupPrep, as illustrated in Figure 15.6. This tool validates that all necessary prerequisites are in place for the installation of the first Exchange Server 2003 in the site.

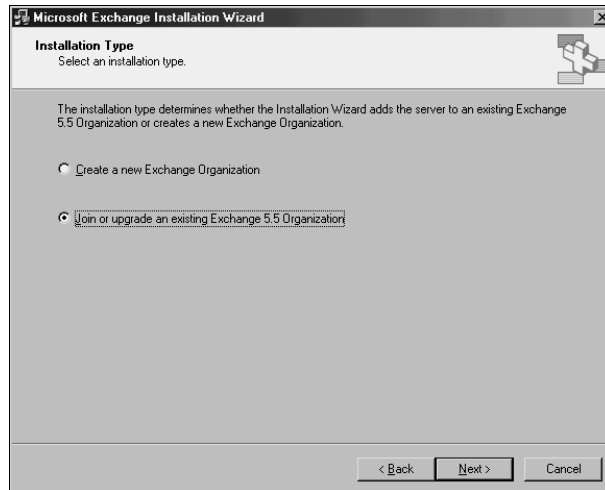


**FIGURE 15.6** Running SetupPrep.

After SetupPrep has been run, the actual setup of the server can be invoked via the tools or simply by running the Setup.exe in the \setup\i386 folder. The following steps properly install Exchange Server 2003 on the system on which they are run:

1. Click Next at the Welcome Wizard.
2. Agree to the end-user licensing agreement and click Next.

3. Choose the installation path and ensure that Typical Installation is chosen. Click Next.
4. Select Join or Upgrade an Existing Exchange 5.5 Organization, as illustrated in Figure 15.7, and click Next.



**FIGURE 15.7** Joining an Exchange 5.5 organization.

#### NOTE

It is imperative that Join or Upgrade an Existing Exchange 5.5 Organization is chosen at this point. If Create a New Exchange Organization is chosen, connectivity will be lost to the Exchange 5.5 organization, and serious steps will be required to regain the functionality.

5. Enter the name of an Exchange 5.5 server in a site the Exchange Server 2003 system will join.
6. Click OK at the prompt to test prerequisite conditions.
7. Select I Agree to agree to the license agreement.
8. Enter the password of the Exchange 5.5 service account.
9. Verify the installation options, and click Next to start the installation.
10. When the installation is complete, click Finish.

To install additional Exchange Server 2003 systems, the installation process is almost identical, and the same procedure can be followed.

## Understanding What Happens Behind the GUI During the Installation

Quite a few items are installed and configured during the installation. The following items describe some of the major components that are installed and configured during setup. The new terms and features are discussed more in depth in the next few sections.

- **Exchange Server 2003 binaries and services installed** All the basic services for Exchange Server 2003 are installed and started. The SMTP and NNTP services from IIS are modified for Exchange Server 2003.
- **Changes to Active Directory Configuration container** Information about the Exchange installation, such as Administrative and Routing Group configurations, are in the Services container.
- **Exchange Server added to Exchange Domain Servers security group** The machine account for the server is added to the Exchange Domain Servers security group to let Exchange Server 2003 run under the local system account.
- **Configuration connection agreement created** A new connection agreement is added to the ADC to replicate configuration and routing information between Exchange 5.5 and Exchange Server 2003.
- **Recipient Update Service created** The RUS is created to update address lists and recipient policies in Active Directory.
- **Site Replication Service (SRS) installed** The SRS is installed and synchronizes the directory with the Exchange 5.5 server in the site.

### Configuration Connection Agreement

During the installation, a new connection agreement is added to the Active Directory Connector. The ConfigCA is responsible for replicating the configuration information between the Exchange platforms. The ConfigCA replicates items such as the Site Addressing Policies and the routing information in the Gateway Address Routing Table (GWART).

### Site Replication Service

The Site Replication Service provides directory interoperability between the Exchange 5.5 and Exchange 2003 servers. The SRS runs as a service and is needed only during the migration period. SRS uses LDAP to communicate between directories, and to Exchange 5.5 servers it looks just like another Exchange 5.5 server. The SRS works in conjunction with the Active Directory Connector for directory synchronization.

Only one SRS is allowed per Exchange Server 2003 system. Additional SRSs can be added, as long as there are additional Exchange Server 2003 systems available to run the service. The SRS has no configuration parameters in the Exchange Server 2003 System Manager.

Synchronization can be forced through the SRS by accessing the SRS from the Exchange 5.5 Administrator program.

SRSs are created on all servers that house Exchange 5.5 Directory Replication Connectors. The Directory Replication Connector is replaced by the SRS to perform intersite replication with the remote Exchange 5.5 site; if an Exchange Server 2003 is configured to communicate with an Exchange 5.5 server, the Site Replication Service automatically is installed and configured at the time of Exchange Server 2003 installation.

**TIP**

To view the Directory Replication Connector endpoints in the SRS, open Exchange System Manager and expand the Tools icon. Next click the Site Replication Services icon and then select Directory Replication Connector View from the View menu. Each Exchange 5.5 site's Directory Replication Connector is now displayed under the Site Replication Service.

## No Service Account in Exchange Server 2003

Exchange Server 2003 runs under the Local System account. This is a major change from Exchange 5.5, where the Exchange Service account had access to every user's mailbox. The benefit of the new architecture is that the service account was a single point of failure in case of a password change or if the account was deleted. When Exchange Server 2003 systems communicate between servers, they are authenticated by the server's machine account in Active Directory.

When the /domainprep option is run, it creates two groups called Exchange Domain Servers and Exchange Enterprise Servers. During Exchange setup, the Exchange server's machine account is added to a Global Security group called Exchange Domain Servers. The Exchange Domain Servers group is granted permissions on all Exchange objects to allow the Exchange Server 2003 services to access and update Active Directory. The Exchange Enterprise Servers group contains the Exchange Domain Servers groups from all domains in the forest and provides cross-domain access between all Exchange Server 2003 systems.

## Recipient Update Service

The Recipient Update Service is responsible for updating address lists and email addresses in Active Directory. Two objects are contained in the Recipient Update Services container by default. The Recipient Update Service is responsible for updating the Enterprise Configuration information in Active Directory, such as Administrative and Routing Group information. The domain specified is responsible for updating the address lists and email addresses configured on objects in the Active Directory domain that the Exchange server resides in. The address list and email addresses are configured under the Recipient Policies and Address List icon, discussed previously in this section.

## Understanding Exchange Server 2003 Mailbox-Migration Methods

Two methods exist for moving mailboxes to Exchange Server 2003, and each differs in hardware requirements and the amount of risk and interoperability during and after the migration. The following migration methods for mailboxes are covered in this section:

- Move Mailboxes
- ExMerge

### Migrating Using the Move Mailbox Approach

Moving user mailboxes between servers is the safest migration method because the servers' databases are not in jeopardy if the migration fails. Moving the users also provides the opportunity to use new hardware with little or no downtime. In addition, moving users allows the organization to migrate users in sizeable chunks over time. Outlook profiles automatically are updated on the desktop, and users are redirected to the new Exchange Server 2003 systems when they log on. The limitation of moving users to a new server is that they can be moved only to an Exchange Server 2003 system in the same Administrative Group. Moving users can also slow the speed of the migration, which can be seen as a positive or negative, depending on the organization's goals.

The Exchange Server 2003 database is much more efficient than Exchange 5.5 was at storing messages. Even with full copies of all messages created by moving the users, administrators might actually see the database size shrink when comparing the size of the Exchange 5.5 and Exchange Server 2003 databases before and after migration. Quite a bit of empty space in the Exchange 5.5 database might also account for a portion of the reduced database size.

To move user mailboxes, open the Active Directory Users and Computers administrative tool and right-click the user to move; then select Exchange Tasks, as illustrated in Figure 15.8.

1. Click Next at the welcome screen.
2. Choose the option for Move Mailbox and click Next.
3. Select the destination server and mailbox store, and click Next.
4. At the next screen, choose either to create a failure report if corruption is detected or to skip corrupted items and continue the mailbox move. Click Next to continue.
5. At the next prompt, you can specify what time the Move Mailbox command should start and finish by. This is very useful when scheduling mailbox moves for off-hour periods. Click Next to continue.

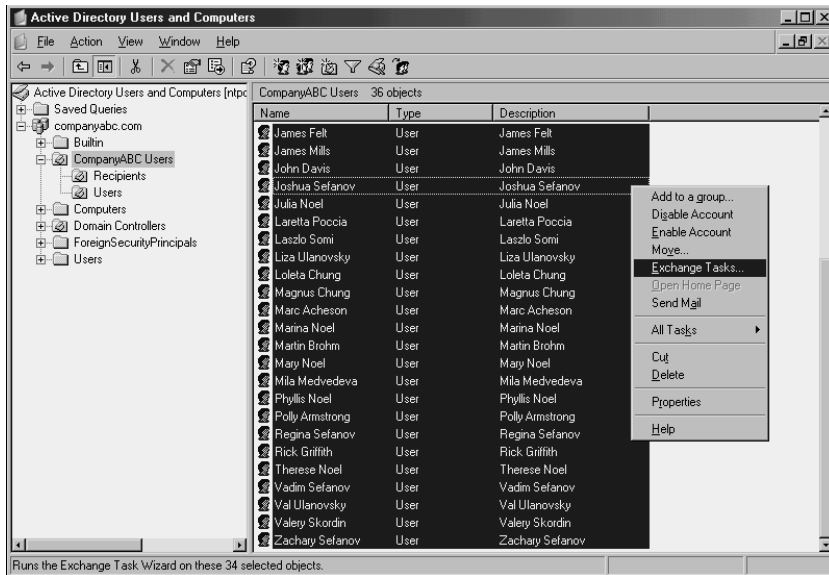


FIGURE 15.8 Selecting mailbox-enabled users to move.

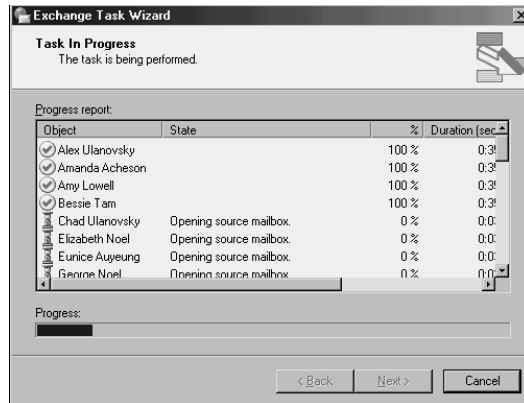


FIGURE 15.9 Moving mailboxes to Exchange Server 2003.

Connections are then made to the source and destination server, and the mailbox contents are moved four at a time, as illustrated in Figure 15.9. If the move is unsuccessful, the user's mailbox still is available on the source Exchange 5.5 server.

## Leapfrogging Server Migrations to Reduce Costs

If server hardware or budget is a limiting factor in the project, the organization might want to consider using a leapfrog method (also called the swing upgrade method) to migrate the users to Exchange Server 2003. Using the leapfrog method, fewer servers need to be purchased to perform the migration through the move users method.

One server still needs to be installed into the Exchange 5.5 site to house the SRS. Users can then be moved to that server or a second Exchange Server 2003 system installed into the site. After all users, connectors, and public folders are moved off the Exchange 5.5 server, that server can be formatted and reinstalled as an Exchange Server 2003 system, allowing the next Exchange 5.5 server's users to be migrated to Exchange Server 2003.

This greatly reduces the speed of the migration process and also requires a Native Mode Windows Server 2003 domain to support the public folders if they are scattered across the Exchange 5.5 servers. Another option for public folders in this scenario is to consolidate the public folders by replicating all the folders to a single Exchange 5.5 server in the site if a Native Mode Windows Server 2003 domain is not available. Connectors could also pose a problem with this method and require a solution before starting the leapfrog process.

One problem with this leapfrog method to be aware of is to not remove the first Exchange 5.5 server in a site until it's the last remaining system in that site. The first Exchange server in the site hosts folders and other functions that are required by the Exchange 5.5 organization.

## Using ExMerge to Migrate Mailboxes

Exmerge.exe is a Microsoft utility that can extract the contents of a user's mailbox to a personal store (PST) file. The PST file created by ExMerge can be added to a user's Outlook profile so the user can access the contents of his old mailbox. ExMerge can also import the PST file to a destination mailbox to another server, site, or organization. On the destination server, ExMerge can merge the imported PST file or overwrite data in the target mailbox.

ExMerge can be used in disaster recovery and in migration scenarios to move user data from point A to point B by selecting the source and destination Exchange servers. ExMerge can be used when an organization wants to start with a clean Exchange Server 2003 environment and wants to be able to move mailbox contents to the new Exchange Server 2003 mailbox or archive the contents of the Exchange 5.5 mailbox in case a user needs access to his old information. ExMerge can also be used to move mailbox contents in organization-naming hierarchies that are the same or different. This is beneficial to organizations that want to build a new naming context when converting to Active Directory and Exchange Server 2003.

A few issues should be considered when using ExMerge to move mailbox contents to a new organization. The biggest one is that the capability to reply to all recipients on old messages could be lost. At a minimum, end-users need to force the names on old messages to be resolved against the new directory by using Alt+K or the Check Name button on the toolbar. End-users might be confused and frustrated if the new system cannot locate all of the users. This can occur if all users have not been migrated from the old organization or if mail connectivity to foreign mail systems has not been re-established in the new Exchange organization. To avoid these problems, every migrated mailbox must have the X.500 address of the old organization added to it, either manually or via a third-party tool.

The second-biggest issue is that appointments on the user's calendar that contain other attendees are severed. The original appointments were resolved to the attendee's old addresses when they were created. This means that if the user deletes the appointment or makes a change to the time or location of the meeting, the other attendees will not be notified.

Even with these issues, ExMerge can be just the thing organizations are looking for, especially when they have survived multiple mergers and acquisitions and are looking to start over with Exchange Server 2003. If the organization plans to use ExMerge for the entire migration process, spend extensive time prototyping the merge process to catch other issues the organization might encounter.

ExMerge merges the following information:

- User folders
- User messages
- Outlook calendars
- Contacts
- Journal
- Notes
- Tasks
- Folder rules that were created in Exchange 5.0 or later

ExMerge does not support the following:

- Forms
- Views
- Schedule+ data
- Folder rules that were created in Exchange 4.0



ExMerge also supports advanced options such as extracting folder permissions. It can filter the messages for extraction from the source store by attachment name or subject that are accessible under the Options button on the source server selection screen.

ExMerge can be configured in either a one- or a two-step merge process. One-step merge processes copy the data from the source mailbox to a PST and then merge the data into the same mailbox on the destination server. The distinguished name of the mailbox and container path of the source and destination servers must be identical to perform a one-step merge.

When using ExMerge to move mailbox data from different organizations and sites, administrators need to be aware that ExMerge cannot create a mailbox on a destination server or set alternative recipient and forwarding rules on the source server. Another item that administrators should be aware of is that ExMerge runs only on Windows Server 2003. ExMerge needs to be able to access several Exchange Server 2003 DLL files. To run ExMerge, copy the `Exmerge.exe` and `Exmerge.ini` files to the Exchange `\bin` directory, or update the system path to include the Exchange `\bin` directory if ExMerge will run from another file location.

To run ExMerge using Exchange 5.5 as the source and Exchange Server 2003 as the destination, the credentials used for ExMerge must have Service Account Administrator privileges in Exchange 5.5 at the Organization, Site, and Configuration container levels. The credentials must also have at least Receive As permission on the destination Exchange 2003 mailbox.

## Migrating Exchange 5.5 Public Folders to Exchange Server 2003

Exchange mailboxes on the new Exchange Server 2003 systems must be able to access system and public folders, and subsequently require copies of the information that existed in those folders. Previously, in Exchange 2000, this required a fairly manual process of marking top-level public folders for replication and then propagating those changes down to subfolders. With Exchange Server 2003, however, a utility called `pfmigrate` automates this functionality. The options for `pfmigrate` are illustrated in Figure 15.10.

The `pfmigrate` utility can be used in advance of a migration to make copies of public folders on the new servers; it then can be used later to remove the public folder copies from the old Exchange 5.5 servers.

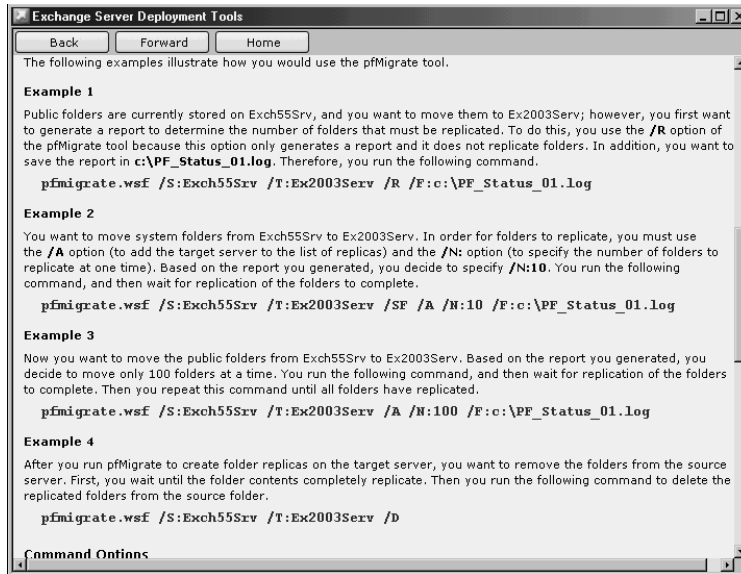


Figure 15.10 PFMigrate options.

## Migrating Exchange 5.5 Connectors and Services to Exchange Server 2003

With connectors in general, the best migration path is to build parallel connectors on Exchange Server 2003 systems. This way, the Exchange 5.5 connectors can remain intact and continue to route mail and perform directory synchronization with the foreign mail system.

The benefits of running connectors on both systems are as follows:

- Involves less risk when migrating the connectors
- Enables administrators to view Exchange 5.5 connector configuration when configuring and administering the Exchange Server 2003 connector
- Allows for controlled mail flow testing
- Provides a fallback plan if software defects or configuration issues are encountered with the Exchange Server 2003 connector

While testing the Exchange Server 2003 connectors, configure the Exchange Server 2003 connector with a higher cost and limited address space. This enables administrators to perform controlled tests of mail flow. When the organization is comfortable with the test results, the address space can be configured to match that of the Exchange 5.5 connectors.

Also, the cost parameter on the connector can be dropped below that of the Exchange 5.5 connector, and the Exchange Server 2003 connector can begin routing all mail to the foreign system. The Exchange 5.5 connectors can remain in place until the organization is comfortable shutting them down.

Many Exchange 5.5 connectors also provide directory synchronization with foreign mail systems. Directory synchronization on the Exchange Server 2003 version of the connector should not be enabled until the mail flow through the connector works properly and the organization is ready to use the Exchange Server 2003 connector full-time. Most connectors such as GroupWise and Lotus Notes provide filtering options for directory synchronization. Marking the option Do Not Import Address Entries of This Type and using an asterisk (\*) as a wildcard means that no entries will be imported and directory synchronization will remain on the Exchange 5.5 server. Also do not export address entries to the foreign mail system, to avoid duplicate address entries in the foreign mail system's address list.

**TIP**

Take screenshots of all connector configuration property pages before attempting to migrate any connector. A lost setting such as an address space entry that is not transferred to the Exchange Server 2003 connector can cause a major routing or directory synchronization disaster on both mail platforms.

## Migrating the Internet Mail Service

The Internet Mail Service has been replaced by several components in Exchange Server 2003:

- SMTP Connector
- Internet Message Format
- Message Delivery Properties

The Internet Mail Service needs to be replaced by an equivalent SMTP Connector in Exchange Server 2003. After the migration, the new connector must be reconfigured to match the settings of the old IMS.

## Migrating Site Connectors

Site Connectors in Exchange v5.5 are replaced by Routing Group Connectors in Exchange Server 2003. Routing Group Connectors that communicate with Exchange 5.5 server communicate over RPC. When Routing Group Connectors communicate between Exchange Server 2003 systems, they communicate over SMTP.

To build parallel connectors to Exchange 5.5 sites, create a Routing Group Connector to the remote Exchange 5.5 site and configure the local bridgehead server as the new Exchange Server 2003 connector server.

## Migrating Foreign Mail Connectors

Exchange Server 2003 includes support for the following foreign mail connectors:

- GroupWise Connector
- Lotus Notes Connector
- X.400 Connector

The best strategy to migrating these connectors is to use a parallel connector strategy. The following configuration settings must be reconfigured after an upgrade is in place on the foreign mail connectors:

- Directory synchronization schedule
- Address spaces
- Import container and export container configurations
- Delivery restriction options, such as message size

Always prototype the configuration, mail transfer, and directory synchronization for foreign mail connectors in a lab environment before implementing them in production. Mistakes in foreign mail connector configuration are usually quite costly and require extensive clean-up on both sides of the connection.

## Creating Support for Unsupported Connectors

To support unsupported connectors such as the PROFS/SNADS, cc:Mail, and MSMAil connectors, remain in Mixed Mode Exchange Server 2003 and leave an Exchange 5.5 site to handle the unsupported connector. For a long-term solution, consider an SMTP solution for mail transfer and LDAP for directory synchronization. Another solution is to locate a third-party replacement connector.

## Completing the Migration to Exchange Server 2003

When all Exchange 5.5 servers are no longer required, the organization can convert to Native Mode Exchange Server 2003. This section covers the steps that need to be accomplished before the conversion to Native Mode can be executed. This section also covers some of the post-migration clean-up processes that need to be run in the Exchange Server 2003 organization. Not all of the clean-up processes need to be run in all environments; this depends on the method the organization used to populate Active Directory.

## Converting to Native Mode

Converting to Native Mode provides the organization with the following benefits and flexibility:

- Multiple Routing Groups are supported.
- Routing Groups can contain servers from different Administrative Groups.
- Servers can move between Routing Groups.
- Mailboxes can be moved between Administrative Groups.
- SMTP becomes the default routing protocol.

There are very few reasons to keep an Exchange organization in Mixed Mode after all Exchange 5.5 servers have been removed. You should change your Exchange organization to Native Mode in the following scenarios:

- No more Exchange 5.5 servers exist in the organization.
- No plans exist to add Exchange Server 5.5 servers to the organization in the future—the likelihood for a merger or acquisition is low.
- No need exists for connectors or gateways that run only on Exchange 5.5.

To convert to Native Mode Exchange Server 2003, the following steps must be accomplished in the following order:

1. Delete all Directory Replication Connectors.
2. Delete all Exchange 5.5 servers from each remaining site.
3. Delete the recipient connection agreements and all other connection agreements for each Exchange 5.5 site.
4. Delete the Site Replication Service (SRS) from all Exchange Server 2003 systems.
5. Switch to Native Mode using the Change Mode button on the organization's properties.

## Deleting All Directory Replication Connectors

For any remaining Exchange 5.5 site that will not be migrated to Exchange Server 2003, the Directory Replication Connectors must be deleted.

Use the Exchange System Manager to delete all Directory Replication Connectors. To delete the Directory Replication Connectors, click Tools to view Site Replication Service. Click the View menu and select Directory Replication Connector View. Click each Directory Replication Connector and press Delete.

Next force replication to propagate the deletion of the Directory Replication Connectors in the Active Directory Connector Manager by using the Replicate Now option on the connection agreements for the site. Verify the deletion of the Directory Replication Connectors by opening the Exchange System Manager on another Exchange Server 2003 system and viewing the Site Replication Service with the Directory Replication Connector view. When the Directory Replication Connector no longer appears, the deletion has been replicated.

### **Removing All Exchange 5.5 Servers from the Organization**

When all the Exchange 5.5 servers are no longer needed, they should be uninstalled through the Exchange 5.5 setup program. The last server to be uninstalled should be the server that was the first server in the site or that contains the first server in the site components.

After all the servers have been uninstalled, the last server must be deleted manually from the Exchange hierarchy. To delete the server from the hierarchy, use the Exchange 5.5 Administrator program to connect to the Exchange Server 2003 system running the Site Replication Service and locate the list of servers in the site. Click the server to be removed and then click Edit, Delete. A warning appears if the server still contains mailboxes or connectors. Click Yes to continue the deletion. Another warning appears if there are still public folder replicas on the server. Click Yes to continue the deletion.

The next step is to force replication through the ADC for all connection agreements for the site by using the Replicate Now option. Verify that the server has been removed from Active Directory through the ADC before deleting the connection agreements and uninstalling the ADC. The server should no longer appear in the Exchange System Manager.

### **Removing the ADC**

Open the Active Directory Connector Manager and delete all connection agreements. If the connection agreements are not deleted, the membership of distribution groups could be lost.

If the Active Directory Connector is no longer needed and all connection agreements have been removed, uninstall the Active Directory Connector through Control Panel, Add/Remove Programs. Also remember to disable or delete the service account used for the ADC if it's not used for any other services.

### **Deleting the SRS**

The Site Replication Services are the last services to be deleted before the conversion to Native Mode can take place. To delete the Site Replication Service, open the Exchange System Manager and expand the Tools icon. Next expand the Site Replication Services icon, and then right-click each Site Replication Service and click Delete.

### Throwing the Native Mode Switch

After the conversion to Native Mode, there is no way to return to mixed mode. The organization should be completely confident about the transition. When all the prerequisite steps have been accomplished, the Change Mode button on the organization properties in the Exchange System Manager should be available. Use the following steps to convert to Native Mode Exchange Server 2003:

1. Open the Exchange System Manager.
2. Right-click the organization and click Properties.
3. Click the General tab, and then click Change Mode under Change Operations Mode. Click Yes to permanently switch the organization's mode to Native Mode.

After the conversion to Exchange Server 2003 Native Mode, Administrative Groups are always displayed in the organization. Administrators have the choice of disabling the display of Routing Groups.

### Performing Post-Migration Clean-Up

Depending on the method that was used to populate the Active Directory, the organization might have to use a utility called ADClean that merges duplicate Active Directory accounts created during the migration process to Exchange Server 2003. If the Active Directory Connector was used to populate the Active Directory from the Exchange 5.5 directory before the Windows NT 4.0 domain accounts were migrated to Active Directory, two entries will exist for each user. The two user account entries should be merged through ADClean to complete the migration and clean up Active Directory.

The most efficient method of migrating to Exchange Server 2003 is to migrate the Windows NT 4.0 user accounts to Active Directory before beginning the Exchange Server 2003 migration, either through an in-place upgrade of the Windows NT 4.0 Primary Domain Controller or by using a migration tool such as the Active Directory Migration Tool (ADMT) v2.0 or other third-party tool. This eliminates the need to run the ADClean utility because the ADC will automatically match the Active Directory account to the mailbox, as long as it's specified as the primary Windows NT account for the mailbox. The ADC will then add the attributes for the mailbox to the existing Active Directory user account.

Duplicate accounts in Active Directory can also occur if two ADC recipient connection agreements were created and marked as primary on a particular container. One account displays as disabled with a red x in the user icon and with a -1 appended to the display name. The other account displays normally. ADClean can also be used to merge these accounts. To merge accounts created due to duplicate connection agreements, run ADClean and select the container to search. On the next screen, verify the accounts to merge and then choose the option to begin the merge or export the merge to a file for import through ADClean later.

**TIP**

The Search Based on Exchange Mailboxes Only option allows ADClean to search for only duplicate accounts created by the ADC.

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The ADClean utility is installed during setup in the `\exchsrvr\bin` directory. ADClean gives administrators the capability to manually select accounts to be merged or run the wizard to search for and suggest accounts to be merged. The merge can be executed immediately or exported to a .csv file to be reviewed by the administrator and then executed later through ADClean.

## Summary

Migration from Exchange 5.5 to Exchange 2000 was a wild ride and required a great deal of planning and insight into the migration process to ensure success. Exchange Server 2003 greatly improves upon the migration capabilities, however, with the addition of the Exchange Deployment Tools. Using these tools, in addition to understanding best practices of the underlying procedures taking place, can do much to increase the reliability and success rate of an Exchange migration and more easily lead an Exchange 5.5 environment to the advanced feature set of Exchange Server 2003.

## Best Practices

- Utilize the Exchange Deployment Tools for the entire migration process to streamline the deployment and reduce risk.
- Migrate using the Move Mailbox process whenever possible, and resort to the ExMerge process only if migrating between Exchange organizations.
- Install the Active Directory Connector on the first Exchange Server in the Site.
- Switch the AD domain to Native Mode in advance of the ADC setup and Exchange migration, to ensure proper replication of security groups.
- Use the site and server consolidation strategies in Exchange Server 2003 to significantly reduce the number of servers that will need to be supported.
- Rely on the ADC Tools to configure the connection agreements, and modify them only if there is a specific reason to do so.
- Leave an Exchange 5.5 Server in place only if it is needed to support connectors that are unsupported in Exchange Server 2003.