Mac OS X Server Migration

For Version 10.3 or Later

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What's in This Guide

Use this guide when you want to migrate data to Mac OS X Server version 10.3 from previous versions of the server.

The guide contains procedures for reusing data you've been using on older servers when you can't or don't want to upgrade.

What's Included in This Guide

This guide is organized into several chapters:

- Chapter 1 contrasts upgrading and migrating and summarizes topics of interest for migration.
- Chapters 2 through 5 tell you how to migrate data from these versions of the server to version 10.3:
  - Mac OS X Server version 10.2 (Chapter 2)
  - Mac OS X Server version 10.1 (Chapter 3)
  - Mac OS X Server version 1.2 (Chapter 4)
  - AppleShare IP (Chapter 5)

  Each chapter provides specific instructions for two migration scenarios:
  - **Migrating in place** is a scenario in which you reuse your existing server computer.
  - **Migrating to a new server** is a scenario in which you move data to a different computer.

Getting Additional Information

This guide refers you to several other guides in the server suite for certain details:

- The getting started guide provides installation and setup instructions for version 10.3.
- Some administration guides contain detailed instructions for some tasks.

Before You Begin

1

Take a few moments to become familiar with upgrading and migrating.

If you're using Mac OS X version 10.1 or 10.2, you may not need to migrate. You might be able to *upgrade* your server, a process that installs and sets up Mac OS X Server version 10.3 while automatically preserving existing data and service settings.

Upgrading Versus Migrating

You can upgrade your version 10.1 or 10.2 server to version 10.3 if:

- You don't need to reformat the current server's hard drive.
- Your current server hardware meets the minimum system requirements for version 10.3.

  You can install Mac OS X Server version 10.3 on any of these computers:
  - Xserve
  - G5
  - Power Mac G4
  - Macintosh Server G4
  - Macintosh Server G3
  - Power Mac G3
  - iMac
  - eMac

  The computer must have:
  - At least 128 megabytes (MB) of random access memory (RAM). At least 256 MB of RAM is required for high-demand servers running multiple services.
  - At least 4 gigabytes (GB) of disk space available.
  - A built-in USB port.

The getting started guide provides instructions for upgrading.

Even if your existing server meets the minimum requirements for upgrading, you may want to migrate instead of upgrade. For example, you may be updating some of your computers and decide that you want to reestablish your server environment on one or more of the updated computers.

The migration scenarios used in this guide address how to migrate data when you can't upgrade or when you want to move existing server data to a different computer.

Migration Scenarios

The instructions in each of the remaining chapters of this guide are grouped into two migration scenarios: migrating in place and migrating to a new server.

Migrating in Place

Use this scenario when you want to reuse your existing server's computer for Mac OS X Server version 10.3.

Make sure that the server hardware meets the minimum system requirements for version 10.3, listed on the previous page.

Migrating to a New Server

Use this scenario when you want to reuse an existing server's data on a different computer.

Before you migrate to the new computer, use the instructions in the getting started guide to perform installation and initial server setup of version 10.3 on the target computer.

Migrating Users and Groups

All versions of the server provide tools that help you migrate user and group accounts.

Saving and Reusing User and Group Accounts

The tool you use to save existing user and group accounts depends on the version of the server you're migrating from:

From	You use
Mac OS X Server version 10.2	Workgroup Manager
Mac OS X Server version 10.1	Server Admin
Mac OS X Server version 1.2	Mac_OS_X_Server_1.2_Export_Tool
AppleShare IP	AppleShare IP Migration utility or Mac OS Server Admin

All these tools except AppleShare IP Migration write account records to an export file. To import users and groups from the file into an existing directory for use with version 10.3, you use Workgroup Manager or the dsimport tool in version 10.3.

The AppleShare IP Migration utility preserves existing user and group accounts (and, optionally, other data) without using export files.

Each chapter provides instructions for using these tools as appropriate.

System Accounts

When you install the server, several user and group accounts are created automatically. These predefined accounts are sometimes called *system accounts*, because they're used by the server system software. See the user management guide for a description of how predefined accounts are used.

You can't change the names or IDs of system accounts. So when you migrate users and groups, make sure you don't try to do so. However, you can add users during migration to two system groups: admin and wheel:

- Wheel is a group that gives members almost as much control as root. If you're a member of the wheel group, you can use the `su` (superuser) command in the Terminal application to log in to a remote computer as the root user. Use ssh to log in, type `su`, then supply the root password when prompted.
- The admin group gives members the rights to administer Mac OS X Server. Admin users can use server management applications and install software that requires administrator privileges.

Here are the predefined user accounts:

Name	Short name	UID
Unprivileged User	nobody	-2
System Administrator	root	0
System Services	daemon	1
Sendmail User	snmsp	25
Printing Services	lp	26
Postfix User	postfix	27
World Wide Web Server	www	70
Apple Events User	eppc	71
MySQL Server	mysql	74
sshd Privilege Separation	sshd	75
QuickTime Streaming Server	qtss	76
Cyrus User	cyrus	77
Mailman User	mailman	78
Unknown User	unknown	99

And here is a list of the predefined group accounts:

Short name	Group ID
nobody	-2
nogroup	-1
wheel	0
daemon	1
kmem	2
sys	3
tty	4
operator	5
mail	6
bin	7
staff	20
smmsp	25
lp	26
postfix	27
postdrop	28
guest	31
utmp	45
uucp	66
dialer	68
network	69
www	70
mysql	74
sshd	75
qtss	76
mailman	78
appserverusr	79
admin	80
appserveradm	81
unknown	99

Migrating Data for Managed Mac OS 8 and 9 Users

On Mac OS X Server version 10.3, Macintosh Manager version 2.2 is used to manage preferences of users of computers running software earlier than Mac OS X. On earlier server versions, these applications were used to manage such clients:

On this server	This application managed pre-Mac OS X users
Mac OS X Server version 10.2	Macintosh Manager version 2.2
Mac OS X Server version 10.1	Macintosh Manager version 2.1
Mac OS X Server version 10.0	Macintosh Manager version 2.0
Mac OS X Server version 1.2	Macintosh Manager version 1.4
AppleShare IP version 6.2 and version 6.3	Macintosh Manager version 1.4 or At Ease for Workgroups version 5.0

Procedures for migrating data for these users vary with the server from which you're migrating because the location of managed user data storage varies:

- On servers prior to Mac OS X Server version 10.0, managed user information was maintained in a database different from the database used to store accounts. Since version 10.0, all account data has been stored in a directory services directory and imported into Macintosh Manager for preference management.
- On Mac OS X Server version 10.0 and later, user account data includes the location of a user's home directory. Personal user documents and user-specific settings (such as Apple menu items or preferences) are stored there. On earlier servers, this data was kept on the volume designated as a workgroup's document storage volume. This meant that users could have different sets of preferences if they belonged to different workgroups.
- Macintosh Manager version 2.2 stores user preferences in /Library/Classic/ in the user's home directory. Earlier versions of client management applications stored preferences in /Library/ in the user's home directory on the server volume.

Each chapter provides instructions for migrating Mac OS 9 managed preferences that are tailored to the environment from which you're moving.

Migrating Other Data

Other data you may be able to migrate, depending on the server version you're currently using, includes web files, WebMail, and the mail database.

Individual chapters in this guide summarize what you can migrate from previous servers to Mac OS X Server version 10.3.

After Migration

When you've finished migrating, consider whether you want to take advantage of any of the newer features to update your server data. For example:

- You can convert a shared NetInfo directory to LDAP. See the Open Directory administration guide for details about the advantages of using LDAP and how to use Server Admin to conduct the conversion.
- You can convert to Open Directory password validation from a different strategy. Authentication and password validation are fully documented in the Open Directory administration guide.
- You can update Mac OS 9 user computers to run Mac OS X. The user management guide contrasts Mac OS 9 and X client management.

Migrating From Mac OS X Server Version 10.2

2

Use the instructions in this chapter when you need to migrate data from a version 10.2 server.

This chapter is for Mac OS X Server version 10.2 environments that can't perform an upgrade installation of version 10.3. Such environments might:

- Require hard drive reformatting
- Be using server hardware that doesn't meet the minimum system requirements described on page 7
- Want to move server data to an updated computer

Note: Before using the instructions in this chapter, upgrade your server to version 10.2.6.

Understanding What You Can Migrate

"Migrating in Place From Version 10.2" on page 15 and "Migrating to a New Server From Version 10.2" on page 26 describe how to reuse the following version 10.2 data with version 10.3:

- Web configuration data
- Web content
- MySQL data
- Mail database
- WebMail data
- FTP configuration files
- NetBoot images
- WebObjects applications and frameworks
- Tomcat data
- AFP settings
- IP firewall configuration
- DNS configuration
- DHCP settings
- User data, including home directories
- QuickTime Streaming Server files and directories

- Macintosh Manager data
- User and group accounts

If you're using any of the following, make a note of any settings you want to continue to use, then see the document indicated for instructions on re-creating the settings after using the instructions in this chapter.

To set up	See the
Computer accounts	User management guide
NFS file services	File services administration guide
Windows services	Windows services administration guide
Print service	Print service administration guide

Tools You Can Use

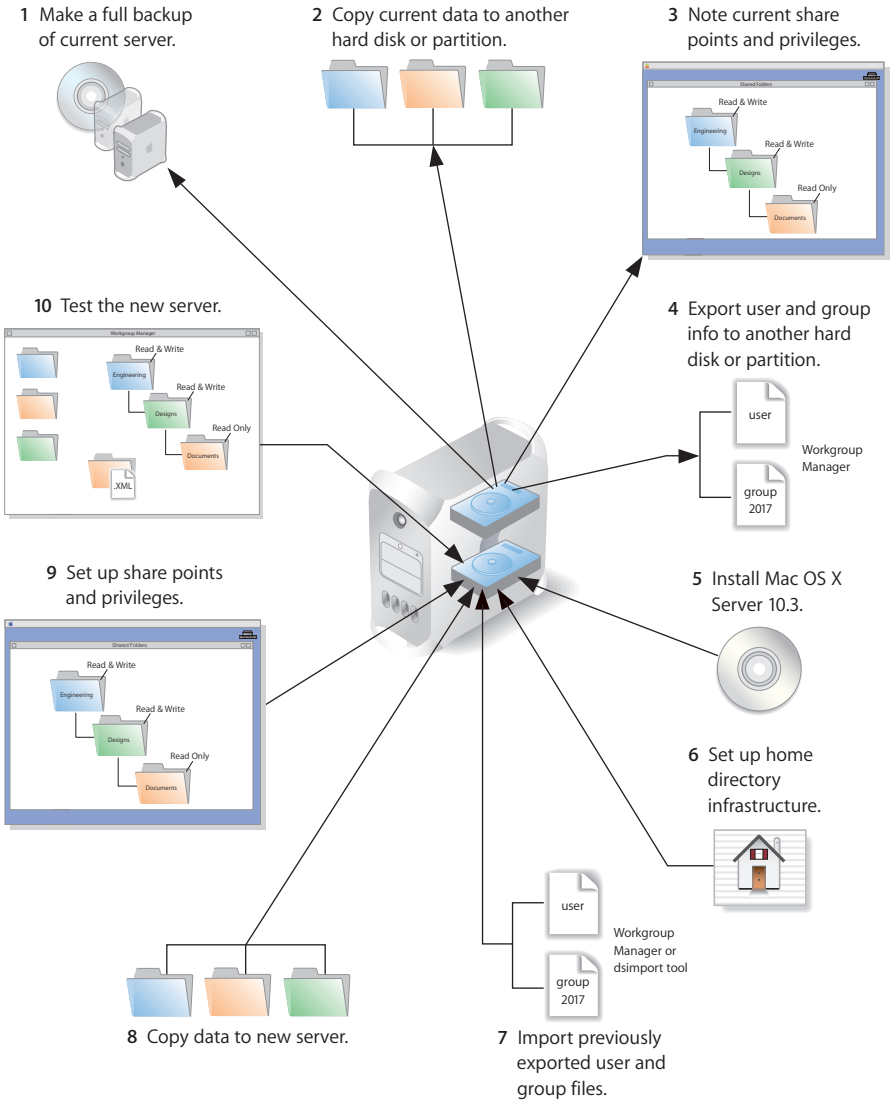
Several tools are available:

- You use Workgroup Manager to export version 10.2 user and group accounts to a character-delimited file, and then import them into a version 10.3 server. You can also import users and groups using the command-line dsimport tool.
- You use the amsmailtool tool to migrate the mail database.
- You use the 49_webconfigmigrator tool to migrate your web configuration.
- You use the nidump, niload, and 50_ipfwconfigmigrator tools and the NetInfo Manager application to migrate your IP firewall configuration.
- You use the nidump, niload, and 51_afpconfigmigrator tools and the NetInfo Manager application to migrate your AFP configuration.
- You use the nidump and niload tools and the NetInfo Manager application to migrate your DHCP configuration.

Instructions in the following sections explain when and how to use these utilities.

Migrating in Place From Version 10.2

To install Mac OS X Server version 10.3 on a computer running version 10.2, follow the instructions in this section.



Step 1: Make a full backup of your current server
Use your current backup program to create a backup copy of your version 10.2 server.

Step 2: Copy current data to another hard disk or partition
Save all the data files you want to reuse with Mac OS X Server version 10.3. You can keep them on the same computer, but make sure you place them on a disk or partition that won't be overwritten when you do the clean 10.3 installation.

Web Configuration Data
Save the directory /etc/httpd/ and all its contents. Also save the file /etc/webperfcache/webperfcache.conf.

Web Content
Copy web content you want to reuse from:
- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables
- Any other location in which it resides

MySQL Data
Mac OS X Server version 10.2 preinstalled version 3.23 of MySQL. Version 10.3 preinstalls a newer version—version 4.0.

Make copies of your MySQL 3.23 databases, stored in /var/mysql/, if you want to migrate to version 4.0.

Mail Database
Save the mail database, if you want to reuse it. Its default location is /Library/AppleMailServer/.

Webmail Data
If you've been using the SquirrelMail installed when you installed version 10.2 and want to continue using it after migration, make a copy of the address books and preferences stored in /var/db/squirrelmail/data/.

FTP Configuration Files
To migrate your FTP settings, save these configuration files:

In this directory	Save these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

AFP

Save the AFP configuration after running the following command from the Terminal application. This command writes the AFP configuration record stored in NetInfo to a file named afpconfig:

```
nidump -r /config/AppleFileServer . > afpconfig
```

NetBoot Images

You can migrate NetBoot images created using Mac OS X Server version 10.2.

Save the <name>.nbi folder for each image you want to migrate, noting the path to the folder if you want to re-create it in version 10.3.

WebObjects Applications and Frameworks

Save WebObjects applications and frameworks located in:

- /Local/Library/WebServer
- /Library/WebServer

Save a copy of webobjects.conf for reference if you want to modify the new version of apache.conf to reproduce your current settings.

For more information about migrating WebObjects data, see the Java Converter documentation on the WebObjects 5 Developer disc.

Tomcat Data

Save any Tomcat servlets you want to reuse. They're in /Library/Tomcat/webapps.

If you've installed Axis independent of the version supplied with your server, save any Simple Object Access Protocol (SOAP) services.

IP Firewall

Save the IP firewall configuration after running the following command from the Terminal application. This command writes the IP firewall configuration record stored in NetInfo to a file named firewallconfig:

```
nidump -r /config/IPFilters . > firewallconfig
```

DNS

Save the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP

Save the DHCP settings after running the following command from the Terminal application. This command writes the DHCP configuration record stored in NetInfo to a file named DHCPconfig:

```
nidump -r /config/dhcp . > DHCPconfig
```

User Data

Save any user data files you want to reuse, especially home directory folders.

Macintosh Manager Data

If you use Macintosh Manager and want to continue using it, copy the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Managed Preferences/

QuickTime Streaming Server Files and Folders

Save files and folders in /Library/QuickTimeStreaming/.

For more information about migrating QTSS, see the QuickTime Streaming Server administration guide.

Step 3: Note current share points and privileges

If your version 10.2 server has share points and privileges you want to re-create on the new server, make a note of them. Note which share points are for home directories.

Step 4: Export users and groups to another hard disk or partition

Use Workgroup Manager to export user and group accounts from a NetInfo or LDAPv3 directory into a character-delimited file that you can import into a directory for use with Mac OS X Server version 10.3.

To export users and groups:

1. In Workgroup Manager, click the Accounts button, then use the At pop-up menu to open the directory from which you want to export accounts.
2. Click the lock to authenticate as domain administrator.
3. Select the user list tab to export users or the group list tab to export groups.
4. To export all accounts listed, don't select any of them. To export a specific account, select it. To export multiple accounts, select them while holding down the Command or Shift key.
5. Choose Server > Export.
6. Specify a name for the export file and the location where you want it created. Save the file in a location that is not overwritten when you do a clean installation of Mac OS X Server version 10.3.
7. Click Export.

When you export users using Workgroup Manager, password information is not exported. If you want to set passwords, you can modify the export file before you import it or you can set passwords after importing, as described in step 7.

Step 5: Install Mac OS X Server version 10.3

Follow the instructions in the getting started guide for performing a clean installation of Mac OS X Server version 10.3.

If you've been using Macintosh Manager to manage preferences for Mac OS 9 clients and want to continue doing so, also install Macintosh Manager 2.2.

Step 6: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

The home directory location identified in imported user accounts must match the physical location of the restored home directories, including the share point location.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. In Workgroup Manager on the computer from which you'll import users, click Accounts, and then open the directory into which you'll import users.
5. If you'll restore home directories in locations that won't exactly match the locations identified in exported user records, you can define a preset that identifies the restore location. If you identify the preset when you import users, the new location will replace the existing location in user records.

   You can also use the preset to specify other default settings you want imported users to inherit, such as password validation settings, mail settings, and so forth.

Step 7: Import previously exported users and groups

You can use Workgroup Manager or the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions and a description of the export file format.

To import users and groups using Workgroup Manager:

1. Place the export file(s) you created in step 4 in a location accessible from your server.
2. You can modify user accounts in an export file if you want to set passwords before importing users.

   Alternatively, you can set up the preset you defined in step 6 so that user passwords are validated using Open Directory authentication and set up the password options so that users are forced to change their passwords the next time they log in.
3. In Workgroup Manager, click the Accounts button.
4. Click the globe icon in the toolbar to open the directory into which you want to import accounts.
5. Click the lock to authenticate as domain administrator.
6. Choose Server > Import, select the import file, and specify import options.

   If you're importing user accounts and using a preset created in step 6 for default home directories or other settings, make sure you identify the preset.
7. Click Import.
8. To create home directories for imported users, you have several options.

   Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.

   Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.

   A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 8: Restore saved data

Copy the files you want to reuse from their backup location.

Web Configuration Data

To migrate the web configuration:

1. Save the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents from the version 10.3 server.
2. Replace the /etc/httpd/ directory and its files on the version 10.3 server with the /etc/httpd/ directory and its contents that you saved on the former server. Also restore the saved /etc/webperfcache/webperfcache.conf.
3. Copy the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents into the restored /etc/httpd/ directory.
4. Open Server Admin and make sure that web service isn't running.
5. Open the Terminal application. As the root user, type the 49_webconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/49_webconfigmigrator
   ```

   A log of the changes made to the files is created in /Library/Logs/Migration/webconfigmigrator.log. Original versions of changed files in /etc/httpd are renamed to httpd.conf.obsolete, httpd_macosxserver.conf.obsolete, and mime_macosxserver.types.obsolete. A new httpd.conf file is created.
6. In Server Admin, start web service.

Web Content

Copy saved web content to:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables

MySQL Data

Restore saved MySQL 3.23 databases in /var/mysql.

There are a few commands you can use on an old database to remove dependency on the ISAM table format, which has been deprecated:

- Run `mysql_fix_privilege_tables` to enable new security privilege features.
- Run either `mysql_convert_table_format` (if all existing tables are ISAM or MyISAM) or `ALTER TABLE table_name TYPE=MyISAM` on all ISAM tables to avoid the deprecated ISAM table format.

Refer to the documentation on the MySQL website for migration details before running these commands:

www.mysql.com/doc/en/Upgrading-from-3.23.html

Mail Database

To migrate the mail database:

1. Make sure that mail service is not running.

   Open Server Admin, then click Mail. If it is not grayed out, click Stop Service.

2. Place the saved database in the default location: /Library/AppleMail Server/. Make sure that no extra files are in that location.

3. Make sure that there is free space on the destination disk equal to the size of the mail database.

4. Open the Terminal application.

5. As the root user, type the /usr/bin/cyrus/tools/amsmailtool command. For information about this tool, type the following command or see the command-line administration guide:

   ```
   /usr/bin/cyrus/tools/amsmailtool -help
   ```

Webmail Data

Place saved address books and preferences in /var/db/squirrelmail/data/.

FTP Configuration Files

Copy saved FTP configuration files to:

- /Library/FTPServer/Configuration/
- /Library/FTPServer/Messages/

AFP Configuration

To migrate the AFP configuration:

1. Restore the afpconfig file.

2. Open Server Admin and make sure that AFP isn't running.

3. Open NetInfo Manager, located in /Applications/Utilities.

4. Authenticate and go to /config.

5. Choose Directory > New SubDirectory to create a record in /config.

6. Change the name of the new record from newdirectory to AppleFileServer by selecting the name property's value and editing it.

7. In the Terminal application, run the following command from the directory in which the afpconfig file resides:

   ```
   sudo niload -r /config/AppleFileServer . < afpconfig
   ```

8. Type the 51_afpconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/51_afpconfigmigrator
   ```

9. In Server Admin, start AFP service.

NetBoot Images

Copy the <name>.nbi folder for each image you want to migrate, optionally placing it into the location where it previously resided.

WebObjects Applications and Frameworks

Make manual modifications to the new installed version of apache.conf if you want to reuse the previous server's web configuration.

Copy saved WebObjects applications and frameworks to:

- /Local/Library/WebServer
- /Library/WebServer

Tomcat Data

Restore Tomcat servlets to /Library/Tomcat/webapps.

Place any SOAP services you want to migrate in /Library/Tomcat/webapps/axis (a symlink to /System/Library/Axis/webapps/axis). Mac OS X Server version 10.3 includes a version of Axis that may be newer or older than the version you've been using.

IP Firewall Configuration

To migrate the IP firewall configuration:

1. Restore the firewallconfig file.
2. Open Server Admin and make sure that firewall service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to IPFilters by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the firewallconfig file resides:

   ```
   sudo niload -r /config/IPFilters . < firewallconfig
   ```

8. Type the 50_ipfwconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/
       50_ipfwconfigmigrator
   ```

9. In Server Admin, start firewall service.

DNS Configuration

Restore the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP Settings

To migrate the DHCP configuration:

1. Restore the DHCPconfig file.
2. Open Server Admin and make sure that DHCP service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities/.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to dhcp by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the DHCPconfig file resides:

   ```
   sudo niload -r /config/dhcp . < DHCPconfig
   ```

8. In Server Admin, start DHCP service.

User Data

Restore saved user data files.

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

Managed preferences you set up using Macintosh Manager 2.2 should be in the correct location in restored home directories: ~/Library/Classic/Preferences. All you need to do is restore the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Preferences/

QuickTime Streaming Server Files and Folders

Follow instructions in the QuickTime Streaming Server administration guide to reuse files and folders saved from /Library/QuickTimeStreaming/.

Step 9: Set up share points and privileges

Re-create the share points and privileges as required.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

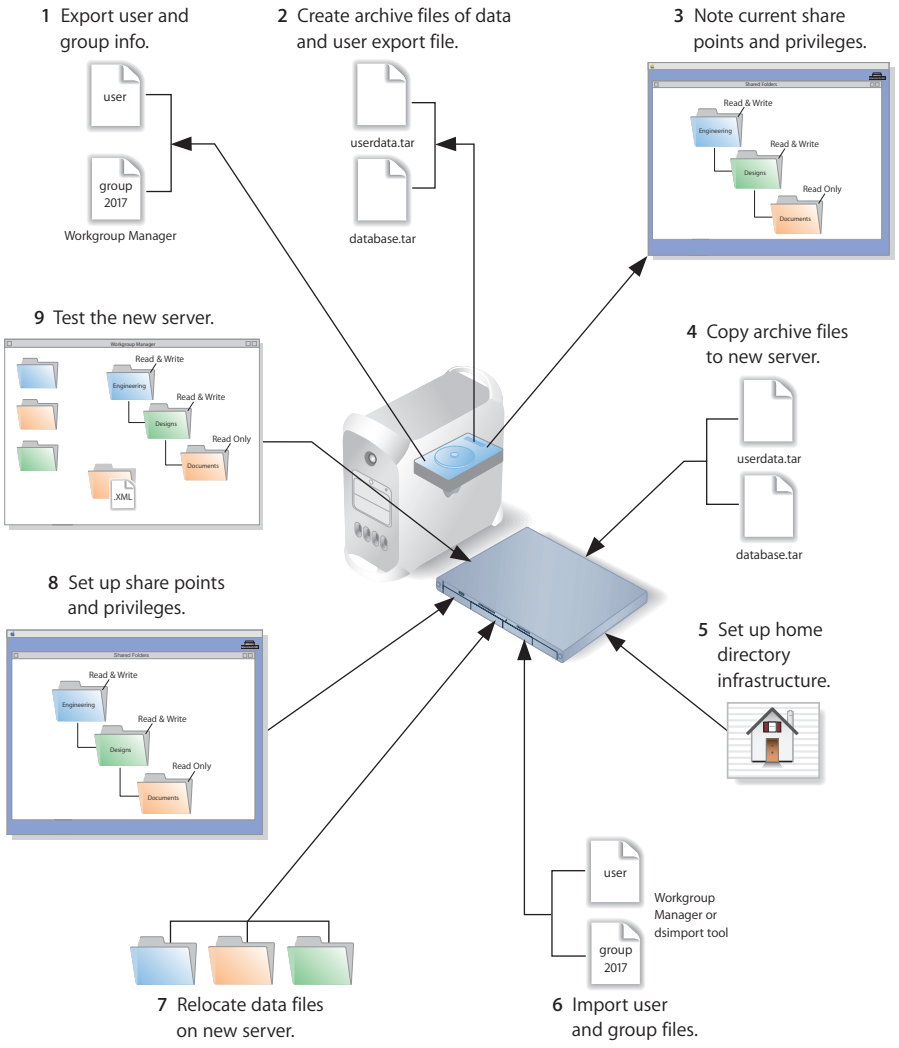
Step 10: Test the new server

To test the new server:

1. Open Workgroup Manager and inspect user and group accounts.
2. Open Server Admin and inspect settings for services whose configuration data you migrated.

Migrating to a New Server From Version 10.2

To move data from a Mac OS X Server version 10.2 computer to a computer with Mac OS X Server version 10.3 installed, follow the instructions in this section. If you've been using Macintosh Manager to manage preferences for Mac OS 9 clients and want to continue doing so, also install Macintosh Manager 2.2 on the version 10.3 computer.



Step 1: Export users and groups

Use Workgroup Manager to export user and group accounts from a NetInfo or LDAPv3 directory into a character-delimited file that you can import into a directory for use with Mac OS X Server version 10.3.

To export users and groups:

1. In Workgroup Manager, click the Accounts button, then use the At pop-up menu to open the directory from which you want to export accounts.
2. Click the lock to authenticate as domain administrator.
3. Select the user list to export users or the group list tab to export groups.
4. To export all accounts listed, don't select any of them. To export a specific account, select it. To export multiple accounts, select them while holding down the Command or Shift key.
5. Choose Server > Export.
6. Specify a name for the export file and the location where you want it created.
7. Click Export.

When you export users using Workgroup Manager, password information is not exported. If you want to set passwords, you can modify the export file before you import it or you can set passwords after importing, as described in step 6.

Step 2: Create archive files

Save all the data files that you want to reuse with Mac OS X Server version 10.3. In step 4 you'll move the files described below, as well as the export file created in step 1, to the version 10.3 computer.

For large amounts of data, you may want to create one or more tar archives or use `/usr/bin/mkdmg` to create disk image files. Both disk images and tar files can be transferred using FTP.

To create a tar archive, use the `tar` command in the Terminal application. The command's `-c` flag creates a new archive file in tar format. Use the `-f` flag to identify the archive file name. Use the `-v` (verbose) flag to view useful information as the command executes:

```
tar -cvf /MyHFSVolume/MM.tar /MyHFSVolume/Macintosh\ Manager
```

The escape character (\ in the example above) indicates a space in the name. You can also use quotation marks to handle embedded spaces:

```
tar -cvf /MyHFSVolume/MM.tar "/MyHFSVolume/Macintosh Manager"
```

Web Configuration Data

Save the directory /etc/httpd/ and all its contents. Also save the file /etc/webperfcache/webperfcache.conf.

Web Content

Copy web content you want to reuse from:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables
- Any other location in which it resides

MySQL Data

Mac OS X Server version 10.2 preinstalled version 3.23 of MySQL. Version 10.3 preinstalls a newer version—version 4.0.

Make copies of your MySQL 3.23 databases, stored in /var/mysql/, if you want to migrate to version 4.0.

Mail Database

Save the mail database, if you want to reuse it. Its default location is /Library/AppleMailServer/.

Webmail Data

If you've been using the SquirrelMail installed when you installed version 10.2 and want to continue using it after migration, make copies of the address books and preferences stored in /var/db/squirrelmail/data/.

FTP Configuration Files

To migrate your FTP settings, save these configuration files:

In this directory	Save these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

AFP

Save the AFP configuration after running the following command from the Terminal application. This command writes the AFP configuration record stored in NetInfo to a file named afpconfig:

```
nidump -r /config/AppleFileServer . > afpconfig
```

NetBoot Images

You can migrate NetBoot images created using Mac OS X Server version 10.2.

Save the <name>.nbi folder for each image you want to migrate, noting the path to the folder if you want to re-create it in version 10.3.

WebObjects Applications and Frameworks

Save WebObjects applications and frameworks located in:

- /Local/Library/WebServer
- /Library/WebServer

Save a copy of webobjects.conf for reference if you want to modify the new version of apache.conf to reproduce your current settings.

For more information on migrating WebObjects data, see the Java Converter documentation on the WebObjects 5 Developer disc.

Tomcat Data

Save any Tomcat servlets you want to reuse. They're in /Library/Tomcat/webapps.

If you've installed Axis independent of the version supplied with your server, save any Simple Object Access Protocol (SOAP) services.

IP Firewall

Save the IP firewall configuration after running the following command from the Terminal application. This command writes the IP firewall configuration record stored in NetInfo to a file named firewallconfig:

```
nidump -r /config/IPFilters . > firewallconfig
```

DNS

Save the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP

Save the DHCP settings after running the following command from the Terminal application. This command writes the DHCP configuration record stored in NetInfo to a file named DHCPconfig:

```
nidump -r /config/dhcp . > DHCPconfig
```

User Data

Save any user data files you want to reuse, especially home directory folders.

Macintosh Manager Data

If you use Macintosh Manager and want to continue using it, copy the folder named Multi-User Items. It's located in /Library/Macintosh Manager/.

QuickTime Streaming Server Files and Folders

Save files and folders in /Library/QuickTimeStreaming/.

For more information on migrating QTSS, see the QuickTime Streaming Server administration guide.

Step 3: Note current share points and privileges

If your version 10.2 server has share points and privileges you want to re-create on the version 10.3 server, make a note of them. Note which share points are for home directories.

Step 4: Copy archive files to the new server

Transfer the files you saved in steps 1 and 2 to the version 10.3 server.

To transfer tar files or disk images using FTP:

1. Use Server Admin on the new server to start FTP service.
2. Set up sharing for a folder into which you'll place files you transfer from the 10.2 computer.
3. On the version 10.2 server, use FTP service to copy the tar files or disk images to the version 10.3 computer.
4. Double-click a tar file to extract its contents. Double-click a disk image to mount it.

Step 5: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

The home directory location identified in imported user accounts must match the physical location of the restored home directories, including the share point location.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. In Workgroup Manager on the computer from which you'll import users, click Accounts, then open the directory into which you'll import users.

5 If you'll restore home directories in locations that won't exactly match the locations identified in exported user records, you can define a preset that identifies the restore location. If you identify the preset when you import users, the new location will replace the existing location in user records.

You can also use the preset to specify other default settings you want imported users to inherit, such as password settings, mail settings, and so forth.

Step 6: Import previously exported users and groups

You can use Workgroup Manager or the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions and a description of the export file format.

To import users and groups using Workgroup Manager:

1 Place the export file(s) you created in step 1 in a location accessible from your server.

2 You can modify user accounts in an export file if you want to set passwords before importing users.

Alternatively, you can set up the preset you defined in step 5 so that user passwords are validated using Open Directory authentication and set up the password validation options so that users are forced to change their passwords the next time they log in.

3 In Workgroup Manager, click the Accounts button.

4 Click the globe icon in the toolbar to open the directory into which you want to import accounts.

5 Click the lock to authenticate as domain administrator.

6 Choose Server > Import, select the import file, and specify import options.

If you're importing user accounts and using a preset, make sure you identify the preset.

7 Click Import.

8 To create home directories for imported users, you have several options.

Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.

Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.

A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 7: Relocate saved data files

Place the files you saved from your version 10.2 server in their final locations.

Web Configuration Data

To migrate the web configuration:

1. Save the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents from the version 10.3 server.
2. Replace the /etc/httpd/ directory and its files on the version 10.3 server with the /etc/httpd/ directory and its contents that you saved on the former server. Also restore the saved /etc/webperfcache/webperfcache.conf.
3. Copy the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents into the restored /etc/httpd/ directory.
4. Open Server Admin and make sure that web service isn't running.
5. Open the Terminal application. As the root user, type the 49_webconfigmigrator command:

   `sudo /System/Library/ServerSetup/MigrationExtras/49_webconfigmigrator`

   A log of the changes made to the files is created in /Library/Logs/Migration/webconfigmigrator.log. Original versions of changed files in /etc/httpd are renamed to httpd.conf.obsolete, httpd_macosxserver.conf.obsolete, and mime_macosxserver.types.obsolete. A new httpd.conf file is created.
6. In Server Admin, start web service.

Web Content

Copy saved web content to:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables

MySQL Data

Restore saved MySQL 3.23 databases in /var/mysql.

There are a few commands you can use on an old database to remove dependency on the ISAM table format, which has been deprecated:

- Run `mysql_fix_privilege_tables` to enable new security privilege features.
- Run either `mysql_convert_table_format` (if all existing tables are ISAM or MyISAM) or `ALTER TABLE table_name TYPE=MyISAM` on all ISAM tables to avoid the deprecated ISAM table format.

Refer to the documentation on the MySQL website for migration details before running these commands:

www.mysql.com/doc/en/Upgrading-from-3.23.html

Mail Database

To migrate the mail database:

1. Make sure that mail service is not running.

   Open Server Admin, then click Mail. If it is not grayed out, click Stop Service.

2. Place the saved database in the default location: /Library/AppleMail Server/. Make sure that no extra files are in that location.

3. Make sure that there is free space on the destination disk equal to the size of the mail database.

4. Open the Terminal application.

5. As the root user, type the /usr/bin/cyrus/tools/amsmailtool command. For information about this tool, type the following command or see the command-line administration guide:

   ```
   /usr/bin/cyrus/tools/amsmailtool -help
   ```

Webmail Data

Place saved address books and preferences in /var/db/squirrelmail/data/.

FTP Configuration Files

Copy saved FTP configuration files to:

- /Library/FTPServer/Configuration/
- /Library/FTPServer/Messages/

AFP Configuration

To migrate the AFP configuration:

1. Restore the afpconfig file.

2. Open Server Admin and make sure that AFP isn't running.

3. Open NetInfo Manager, located in /Applications/Utilities.

4. Authenticate and go to /config.

5. Choose Directory > New SubDirectory to create a record in /config.

6. Change the name of the new record from newdirectory to AppleFileServer by selecting the name property's value and editing it.

7. In the Terminal application, run the following command from the directory in which the afpconfig file resides:

   ```
   sudo niload -r /config/AppleFileServer . < afpconfig
   ```

8. Type the 51_afpconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/51_afpconfigmigrator
   ```

9. In Server Admin, start AFP service.

NetBoot Images

Copy the <name>.nbi folder for each image you want to migrate, optionally placing it into the location where it previously resided.

WebObjects Applications and Frameworks

Make manual modifications to the new installed version of apache.conf if you want to reuse the previous server's web configuration.

Copy saved WebObjects applications and frameworks to:

- /Local/Library/WebServer
- /Library/WebServer

Tomcat Data

Restore Tomcat servlets to /Library/Tomcat/webapps.

Place any SOAP services you want to migrate in /Library/Tomcat/webapps/axis (a symlink to /System/Library/Axis/webapps/axis). Mac OS X Server version 10.3 includes a version of Axis that may be newer or older than the version you've been using.

IP Firewall Configuration

To migrate the IP firewall configuration:

1. Restore the firewallconfig file.
2. Open Server Admin and make sure that firewall service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to IPFilters by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the firewallconfig file resides:

   ```
   sudo niload -r /config/IPFilters . < firewallconfig
   ```

8. Type the 50_ipfwconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/
       50_ipfwconfigmigrator
   ```

9. In Server Admin, start firewall service.

DNS Configuration

Restore the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP Settings

To migrate the DHCP configuration:

1. Restore the DHCPconfig file.
2. Open Server Admin and make sure that DHCP service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities/.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to dhcp by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the DHCPconfig file resides:

   ```
   sudo niload -r /config/dhcp . < DHCPconfig
   ```

8. In Server Admin, start DHCP service.

User Data

Restore saved user data files.

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

Managed preferences you set up using Macintosh Manager 2.2 should be in the correct location in restored home directories: ~/Library/Classic/Preferences. All you need to do is restore the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Preferences/

QuickTime Streaming Server Files and Folders

Follow instructions in the QuickTime Streaming Server administration guide to reuse files and folders saved from /Library/QuickTimeStreaming/.

Step 8: Set up share points and privileges

Re-create the share points and privileges as required.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

Step 9: Test the new server

To test the new server:

1. Open Workgroup Manager and inspect user and group accounts.
2. Open Server Admin and inspect settings for services whose configuration data you migrated.

Migrating From Mac OS X Server Version 10.1

3

Use the instructions in this chapter when you need to migrate data from a version10.1 server.

This chapter is for Mac OS X Server version 10.1 environments that can't perform an upgrade installation of version 10.3 because they might:

- Require hard drive reformatting in order to implement HFS or mirroring
- Be using server hardware that doesn't meet the minimum system requirements described on page 7
- Want to move server data to an updated computer

Note: Before using the instructions in this chapter, upgrade your server to version 10.1.4 or 10.1.5.

Understanding What You Can Migrate

"Migrating in Place From Version 10.1" on page 39 and "Migrating to a New Server From Version 10.1" on page 49 describe how to reuse the following data with version 10.3:

- Web configuration data
- Web content
- MySQL data
- Mail database
- FTP configuration files
- WebObjects applications and frameworks
- Tomcat data
- AFP settings
- IP firewall configuration
- DNS configuration
- DHCP settings
- User data, including home directories
- QuickTime Streaming Server files and directories
- Macintosh Manager data
- User and group accounts

If you're using any of the following, make a note of any settings you want to continue to use, then see the document indicated for instructions on re-creating the settings after using the instructions in this chapter.

To set up	See the
Computer accounts	User management guide
NFS file services	File services administration guide
Windows services	Windows services administration guide
Print service	Print service administration guide

You can't migrate NetBoot images created prior to Mac OS X Server version 10.2. Re-create your old images using the default startup images provided with Mac OS X Server version 10.3.

Tools You Can Use

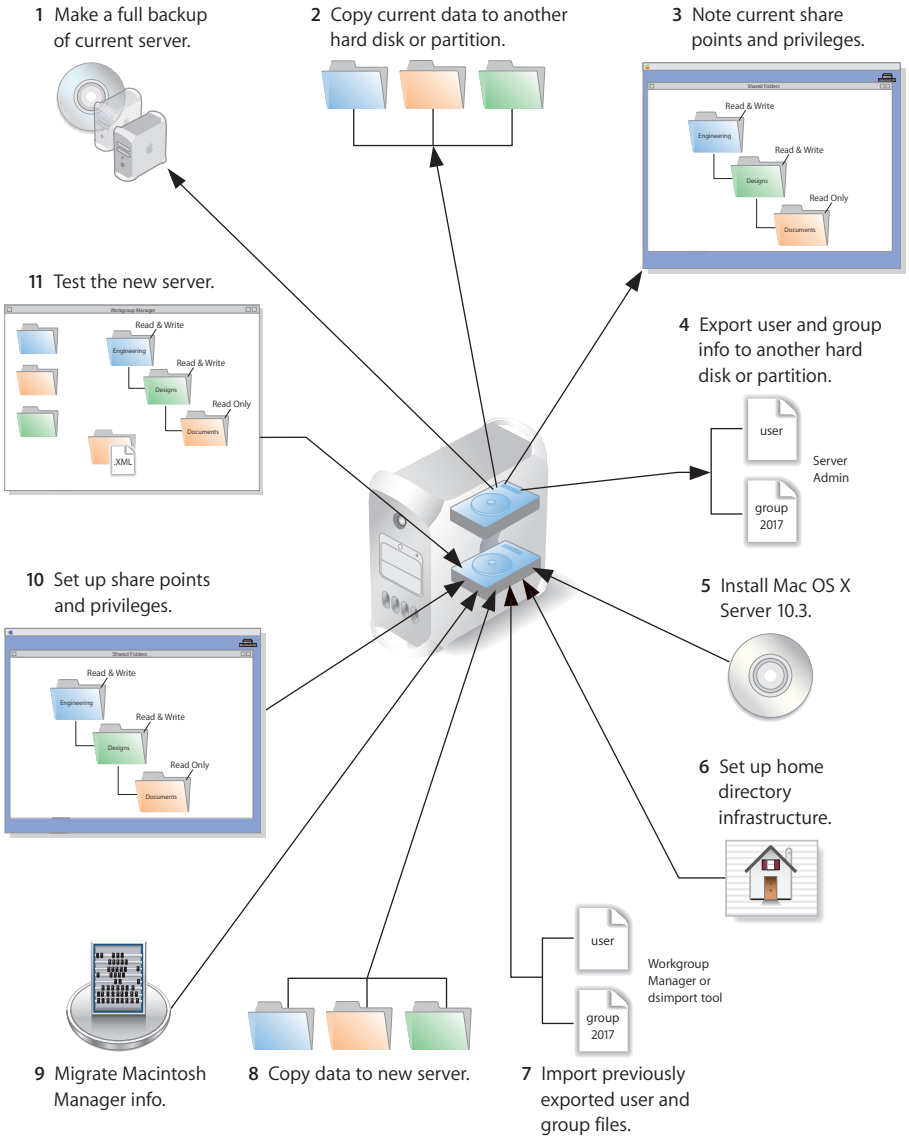
Several utilities are available for use during migration:

- You use Server Admin to export version 10.1 users and groups to an XML export file.
- You use Workgroup Manager in version 10.3 to import users and groups from the export file.
- You use the amsmailtool tool to migrate the mail database.
- You use the 49_webconfigmigrator tool to migrate your web configuration.
- You use the nidump, niload, and 50_ipfwconfigmigrator tools and the NetInfo Manager application to migrate your IP firewall configuration.
- You use the nidump, niload, and 51_afpconfigmigrator tools and the NetInfo Manager application to migrate your AFP configuration.
- You use the nidump and niload tools and the NetInfo Manager application to migrate your DHCP configuration.

Instructions in the following sections explain when and how to use these utilities.

Migrating in Place From Version 10.1

To install Mac OS X Server version 10.3 on a computer running version 10.1, follow the instructions in this section. Make sure that the computer meets the minimum requirements for version 10.3, described on page 7.



Step 1: Make a full backup of your current server

Use your current backup program to create a backup copy of your version 10.1 server.

Step 2: Copy current data to another hard disk or partition

Save all the data files that you want to reuse with Mac OS X Server version 10.3. You can keep them on the same computer, but make sure you place them on a disk or partition that won't be overwritten when you do the clean 10.3 installation.

Web Configuration Data

Save the directory /etc/httpd/ and all its contents. Also save the file /etc/webperfcache/webperfcache.conf.

Web Content

Copy web content you want to reuse from:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables
- Any other location in which it resides

MySQL Data

Mac OS X Server version 10.1 preinstalled MySQL version 3.23. Version 10.3 preinstalls a newer version—version 4.0.

Make copies of your MySQL databases, stored in /var/mysql/, if you want to migrate to version 4.0.

Mail Database

Save the mail database, if you want to reuse it. Its default location is /Library/AppleMailServer/.

Webmail Data

Mac OS X Server version 10.3 installs a version of SquirrelMail configured to use the mail server running on the local computer. Address books and preferences are stored in /var/db/squirrelmail/data/. You may want to migrate your users' address books and preferences to that location.

FTP Configuration Files

To migrate your FTP settings, save these configuration files:

In this directory	Save these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

AFP

Save the AFP configuration after running the following command from the Terminal application. This command writes the AFP configuration record stored in NetInfo to a file named afpconfig:

```
nidump -r /config/AppleFileServer . > afpconfig
```

WebObjects Applications and Frameworks

Save WebObjects applications and frameworks located in:

- /Local/Library/WebServer
- /Library/WebServer

Save a copy of webobjects.conf for reference if you want to modify the new version of apache.conf to reproduce your current settings.

For more information about migrating WebObjects data, see the Java Converter documentation on the WebObjects 5 Developer disc.

Tomcat Data

Save any Tomcat servlets you want to reuse. They're in /Library/Tomcat/webapps.

If you've installed Axis independent of the version supplied with your server, save any Simple Object Access Protocol (SOAP) services.

IP Firewall

Save the IP firewall configuration after running the following command from the Terminal application. This command writes the IP firewall configuration record stored in NetInfo to a file named firewallconfig:

```
nidump -r /config/IPFilters . > firewallconfig
```

DNS

Save the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP

Save the DHCP settings after running the following command from the Terminal application. This command writes the DHCP configuration record stored in NetInfo to a file named DHCPconfig:

```
nidump -r /config/dhcp . > DHCPconfig
```

User Data

Save any user data files you want to reuse, especially home directory folders.

Macintosh Manager Data

If you use Macintosh Manager and want to continue using it, copy the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Managed Preferences/

QuickTime Streaming Server Files and Folders

Save files and folders in /Library/QuickTimeStreaming/.

For more information about migrating QTSS, see the QuickTime Streaming Server administration guide.

Step 3: Note current share points and privileges

If your version 10.1 server has share points and privileges you want to re-create on the new server, make a note of them. Note which share points are for home directories.

Step 4: Export users and groups to another hard disk or partition

Use Server Admin to export user and group accounts from a NetInfo directory into an XML file that you can import into a directory for use with Mac OS X Server version 10.3.

To export users and groups:

1. Open Server Admin and log in to the server that stores the user and group accounts you want to migrate.
2. Click Users & Groups and choose Show Users & Groups.
3. Select the users and groups you want to export, then click Export.

When you export users using Server Admin, encrypted passwords are exported. If you want to reset passwords, you can do so using Workgroup Manager, as described in step 7.

Step 5: Install Mac OS X Server version 10.3

Follow the instructions in the getting started guide for performing a clean installation of Mac OS X Server version 10.3.

If you've been using Macintosh Manager to manage preferences for Mac OS 9 clients and want to continue doing so, also install Macintosh Manager 2.2.

Step 6: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

The home directory location identified in imported user accounts must match the physical location of the restored home directories, including the share point location.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. In Workgroup Manager on the computer from which you'll import users, click Accounts, then open the directory into which you'll import users.
5. If you'll restore home directories in locations that won't exactly match the locations identified in exported user records, you can define a preset that identifies the restore location. If you identify the preset when you import users, the new location will replace the existing location in user records.

   You can also use the preset to specify other default settings you want imported users to inherit, such as password validation settings, mail settings, and so forth.

Step 7: Import previously exported users and groups

You can use Workgroup Manager or the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions.

To import users and groups using Workgroup Manager:

1. Place the export file(s) you created in step 4 in a location accessible from your server.
2. If you want imported users to have passwords validated using Open Directory authentication, you can set that up in the preset you defined in step 6. Enable the password option that forces users to change their passwords the next time they log in.

   You can also change password settings using Workgroup Manager after you've finished importing users.
3. In Workgroup Manager, click the Accounts button.
4. Click the globe icon in the toolbar to open the directory into which you want to import accounts.
5. Click the lock to authenticate as domain administrator.
6. Choose Server > Import, select the import file, and specify import options.

   If you're importing user accounts and using a preset, make sure you identify the preset.
7. Click Import.

8 To create home directories for imported users, you have several options.

Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.

Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.

A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 8: Restore saved data

Copy the files you want to reuse from their backup location.

Web Configuration Data

To migrate the web configuration:

1 Save the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents from the version 10.3 server.

2 Replace the /etc/httpd/ directory and its files on the version 10.3 server with the /etc/httpd/ directory and its contents that you saved on the former server. Also restore the saved /etc/webperfcache/webperfcache.conf.

3 Copy the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents into the restored /etc/httpd/ directory.

4 Open Server Admin and make sure that web service isn't running.

5 Open the Terminal application. As the root user, type the 49_webconfigmigrator command:

```
sudo /System/Library/ServerSetup/MigrationExtras/49_webconfigmigrator
```

A log of the changes made to the files is created in /Library/Logs/Migration/webconfigmigrator.log. Original versions of changed files in /etc/httpd are renamed to httpd.conf.obsolete, httpd_macosxserver.conf.obsolete, and mime_macosxserver.types.obsolete. A new httpd.conf file is created.

6 In Server Admin, start web service.

Web Content

Copy saved web content to:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables

MySQL Data

Restore saved MySQL databases in /var/mysql.

There are a few commands you can use on an old database to remove dependency on the ISAM table format, which has been deprecated:

- Run `mysql_fix_privilege_tables` to enable new security privilege features.
- Run either `mysql_convert_table_format` (if all existing tables are ISAM or MyISAM) or `ALTER TABLE table_name TYPE=MyISAM` on all ISAM tables to avoid the deprecated ISAM table format.

Refer to the documentation on the MySQL website for migration details before running these commands:

www.mysql.com/doc/en/index.html

Mail Database

To migrate the mail database:

1. Make sure that mail service is not running.

   Open Server Admin, then click Mail. If it is not grayed out, click Stop Service.

2. Place the saved database in the default location: /Library/AppleMail Server/. Make sure that no extra files are in that location.

3. Make sure that there is free space on the destination disk equal to the size of the mail database.

4. Open the Terminal application.

5. As the root user, type the /usr/bin/cyrus/tools/amsmailtool command. For information about this tool, type the following command or see the command-line administration guide:

   ```
   /usr/bin/cyrus/tools/amsmailtool -help
   ```

Webmail Data

Place user address books and preferences in /var/db/squirrelmail/data/ if you want them to use SquirrelMail that comes with version 10.3.

FTP Configuration Files

Copy saved FTP configuration files to:

- /Library/FTPServer/Configuration/
- /Library/FTPServer/Messages/

AFP Configuration

To migrate the AFP configuration:

1. Restore the afpconfig file.
2. Open Server Admin and make sure that AFP isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to AppleFileServer by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the afpconfig file resides:

   ```
   sudo niload -r /config/AppleFileServer . < afpconfig
   ```

8. Type the 51_afpconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/51_afpconfigmigrator
   ```

9. In Server Admin, start AFP service.

WebObjects Applications and Frameworks

Make manual modifications to the new installed version of apache.conf if you want to reuse the previous server's web configuration.

Copy saved WebObjects applications and frameworks to:

- /Local/Library/WebServer
- /Library/WebServer

Tomcat Data

Restore Tomcat servlets to /Library/Tomcat/webapps.

Place any SOAP services you want to migrate in /Library/Tomcat/webapps/axis (a symlink to /System/Library/Axis/webapps/axis). Mac OS X Server version 10.3 includes a version of Axis that may be newer or older than the version you've been using.

IP Firewall Configuration

To migrate the IP firewall configuration:

1. Restore the firewallconfig file.
2. Open Server Admin and make sure that firewall service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to IPFilters by selecting the name property's value and editing it.

7 In the Terminal application, run the following command from the directory in which the firewallconfig file resides:

```
sudo niload -r /config/IPFilters . < firewallconfig
```

8 Type the 50_ipfwconfigmigrator command:

```
sudo /System/Library/ServerSetup/MigrationExtras/
     50_ipfwconfigmigrator
```

9 In Server Admin, start firewall service.

DNS Configuration

Restore the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP Settings

To migrate the DHCP configuration:

1 Restore the DHCPconfig file.

2 Open Server Admin and make sure that DHCP service isn't running.

3 Open NetInfo Manager, located in /Applications/Utilities/.

4 Authenticate and go to /config.

5 Choose Directory > New SubDirectory to create a record in /config.

6 Change the name of the new record from newdirectory to dhcp by selecting the name property's value and editing it.

7 In the Terminal application, run the following command from the directory in which the DHCPconfig file resides:

```
sudo niload -r /config/dhcp . < DHCPconfig
```

8 In Server Admin, start DHCP service.

User Data

Restore saved user data files.

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

QuickTime Streaming Server Files and Folders

Follow instructions in the QuickTime Streaming Server administration guide to reuse files and folders saved from /Library/QuickTimeStreaming/.

Step 9: Migrate Macintosh Manager Information

Move the Preferences folders in Mac OS 9 user home directories from ~/Library/Preferences to ~/Library/Classic/Preferences if you want to preserve existing preferences. If you don't move the Preferences folder, users can log in, but all application preferences are new, not reused.

Restore the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Preferences/

Step 10: Set up share points and privileges

Re-create the share points and privileges as required.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

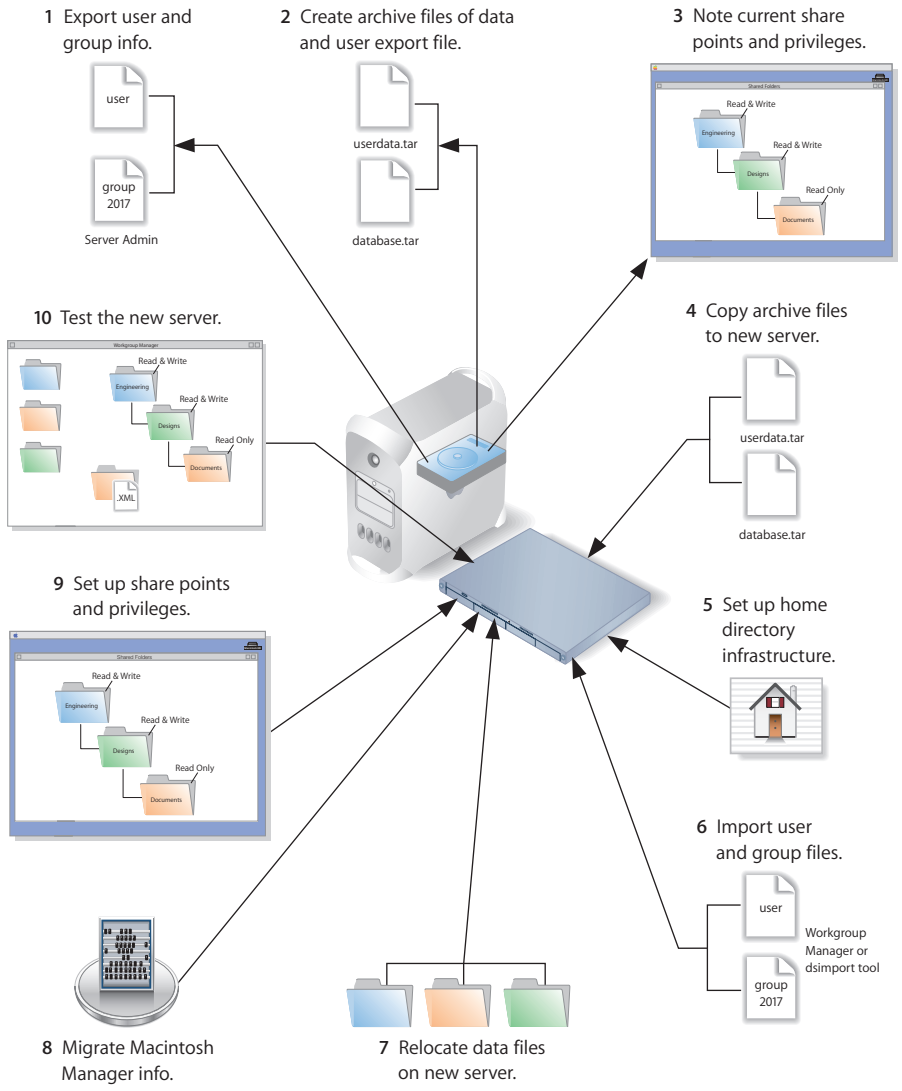
Step 11: Test the new server

To test the new server:

1. Open Workgroup Manager and inspect user and group accounts.
2. Open Server Admin and inspect settings for services whose configuration data you migrated.

Migrating to a New Server From Version 10.1

To move data from a Mac OS X Server version 10.1 computer to a computer with Mac OS X Server version 10.3 installed, follow the instructions in this section. If you've been using Macintosh Manager to manage preferences for Mac OS 9 clients and want to continue doing so, also install Macintosh Manager 2.2 on the version 10.3 computer.



Step 1: Export users and groups

Use Server Admin to export user and group accounts from a NetInfo directory into an XML file that you can import into a directory for use with Mac OS X Server version 10.3.

To export users and groups:

1. Open Server Admin and log in to the server that stores the user and group accounts you want to migrate.
2. Click Users & Groups and choose Show Users & Groups.
3. Select the users and groups you want to export, then click Export.

When you export users using Server Admin, encrypted passwords are exported. If you want to reset passwords, you can do so using Workgroup Manager, as described in step 6.

Step 2: Create archive files

Save all the data files that you want to reuse with Mac OS X Server version 10.3. In step 4 you'll move the files described below, as well as the export file created in step 1, to the version 10.3 computer.

For large amounts of data, you may want to create one or more tar archives or use `/usr/bin/mkdmg` to create disk image files. Both disk images and tar files can be transferred using FTP.

To create a tar archive, use the `tar` command in the Terminal application. The command's `-c` flag creates a new archive file in tar format. Use the `-f` flag to identify the archive file name. Use the `-v` (verbose) flag to view useful information as the command executes:

```
tar -cvf /MyHFSVolume/MM.tar /MyHFSVolume/Macintosh\ Manager
```

The escape character (\ in the example above) indicates a space in the name. You can also use quotation marks to handle embedded spaces:

```
tar -cvf /MyHFSVolume/MM.tar "/MyHFSVolume/Macintosh Manager"
```

Web Configuration Data

Save the directory /etc/httpd/ and all its contents. Also save the file /etc/webperfcache/webperfcache.conf.

Web Content

Copy web content you want to reuse from:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables
- Any other location in which it resides

MySQL Data

Mac OS X Server version 10.1 preinstalled MySQL version 3.23. Version 10.3 preinstalls a newer version—version 4.0.

Make a copy of your MySQL databases, stored in /var/mysql/, if you want to migrate to version 4.0.

Mail Database

Save the mail database, if you want to reuse it. Its default location is /Library/AppleMailServer/.

Webmail Data

Mac OS X Server version 10.3 installs a version of SquirrelMail configured to use the mail server running on the local computer. Address books and preferences are stored in /var/db/squirrelmail/data/. You may want to migrate your users' address books and preferences to that location.

FTP Configuration Files

To migrate your FTP settings, save these configuration files:

In this directory	Save these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

AFP

Save the AFP configuration after running the following command from the Terminal application. This command writes the AFP configuration record stored in NetInfo to a file named afpconfig:

```
nidump -r /config/AppleFileServer . > afpconfig
```

WebObjects Applications and Frameworks

Save WebObjects applications and frameworks located in:

- /Local/Library/WebServer
- /Library/WebServer

Save a copy of webobjects.conf for reference if you want to modify the new version of apache.conf to reproduce your current settings.

For more information about migrating WebObjects data, see the Java Converter documentation on the WebObjects 5 Developer disc.

Tomcat Data

Save any Tomcat servlets you want to reuse. They're in /Library/Tomcat/webapps.

If you've installed Axis independent of the version supplied with your server, save any Simple Object Access Protocol (SOAP) services.

IP Firewall

Save the IP firewall configuration after running the following command from the Terminal application. This command writes the IP firewall configuration record stored in NetInfo to a file named firewallconfig:

```
nidump -r /config/IPFilters . > firewallconfig
```

DNS

Save the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP

Save the DHCP settings after running the following command from the Terminal application. This command writes the DHCP configuration record stored in NetInfo to a file named DHCPconfig:

```
nidump -r /config/dhcp . > DHCPconfig
```

User Data

Save any user data files you want to reuse, especially home directory folders.

Macintosh Manager Data

If you use Macintosh Manager and want to continue using it, copy the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Managed Preferences/

QuickTime Streaming Server Files and Folders

Save files and folders in /Library/QuickTimeStreaming/.

For more information about migrating QTSS, see the QuickTime Streaming Server administration guide.

Step 3: Note current share points and privileges

If your version 10.1 server has share points and privileges you want to re-create on the version 10.3 server, make a note of them. Note which share points are for home directories.

Step 4: Copy archive files to the new server

Transfer the files you saved in steps 1 and 2 to the version 10.3 server.

To transfer tar files or disk images using FTP:

1. Use Server Admin on the new server to start FTP service.
2. Set up sharing for a folder into which you'll place files you transfer from the 10.1 computer.
3. On the version 10.1 server, use FTP service to copy the tar files or disk images to the version 10.3 computer.
4. Double-click a tar file to extract its contents. Double-click a disk image to mount it.

Step 5: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

The home directory location identified in imported user accounts must match the physical location of the restored home directories, including the share point location.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. In Workgroup Manager on the computer from which you'll import users, click Accounts then open the directory into which you'll import users.
5. If you'll restore home directories in locations that won't exactly match the locations identified in exported user records, you can define a preset that identifies the restore location. If you identify the preset when you import users, the new location will replace the existing location in user records.

   You can also use the preset to specify other default settings you want imported users to inherit, such as password validation settings, mail settings, and so forth.

Step 6: Import previously exported users and groups

You can use Workgroup Manager or the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions.

To import users and groups using Workgroup Manager:

1. Place the export file(s) you created in step 1 in a location accessible from your server.
2. If you want imported users to have passwords validated using Open Directory authentication, you can set that up in the preset you defined in step 5. Enable the password option that forces users to change their passwords the next time they log in.

   You can also change password settings using Workgroup Manager after you've finished importing users.
3. In Workgroup Manager, click the Accounts button.
4. Click the globe icon in the toolbar to open the directory into which you want to import accounts.

5 Click the lock to authenticate as domain administrator.

6 Choose Server > Import, select the import file, and specify import options.

If you're importing user accounts and using a preset, make sure you identify the preset.

7 Click Import.

8 To create home directories for imported users, you have several options.

Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.

Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.

A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 7: Relocate saved data files

Place the files you saved from your version 10.1 server in their final location.

Web Configuration Data

To migrate the web configuration:

1 Save the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents from the version 10.3 server.

2 Replace the /etc/httpd/ directory and its files on the version 10.3 server with the /etc/httpd/ directory and its contents that you saved on the former server. Also restore the saved /etc/webperfcache/webperfcache.conf.

3 Copy the file /etc/httpd/servermgr_web_httpd_config.plist and the directory /etc/httpd/sites_disabled/ and all its contents into the restored /etc/httpd/ directory.

4 Open Server Admin and make sure that web service isn't running.

5 Open the Terminal application. As the root user, type the 49_webconfigmigrator command:

```
sudo /System/Library/ServerSetup/MigrationExtras/49_webconfigmigrator
```

A log of the changes made to the files is created in /Library/Logs/Migration/webconfigmigrator.log. Original versions of changed files in /etc/httpd are renamed to httpd.conf.obsolete, httpd_macosxserver.conf.obsolete, and mime_macosxserver.types.obsolete. A new httpd.conf file is created.

6 In Server Admin, start web service.

Web Content

Copy saved web content to:

- /Library/Webserver/Documents/
- /Library/Webserver/CGI-Executables

MySQL Data

Restore saved MySQL databases in /var/mysql.

There are a few commands you can use on an old database to remove dependency on the ISAM table format, which has been deprecated:

- Run `mysql_fix_privilege_tables` to enable new security privilege features.
- Run either `mysql_convert_table_format` (if all existing tables are ISAM or MyISAM) or `ALTER TABLE table_name TYPE=MyISAM` on all ISAM tables to avoid the deprecated ISAM table format.

Refer to the documentation on the MySQL website for migration details before running these commands:

www.mysql.com/doc/en/index.html

Mail Database

To migrate the mail database:

1. Make sure that mail service is not running.

   Open Server Admin, then click Mail. If it is not grayed out, click Stop Service.

2. Place the saved database in the default location: /Library/AppleMail Server/. Make sure that no extra files are in that location.

3. Make sure that there is free space on the destination disk equal to the size of the mail database.

4. Open the Terminal application.

5. As the root user, type the /usr/bin/cyrus/tools/amsmailtool command. For information about this tool, type the following command or see the command-line administration guide:

   ```
   /usr/bin/cyrus/tools/amsmailtool -help
   ```

Webmail Data

Place user address books and preferences in /var/db/squirrelmail/data/ if you want them to use SquirrelMail that comes with version 10.3.

FTP Configuration Files

Copy saved FTP configuration files to:

- /Library/FTPServer/Configuration/
- /Library/FTPServer/Messages/

AFP Configuration

To migrate the AFP configuration:

1. Restore the afpconfig file.
2. Open Server Admin and make sure that AFP isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to AppleFileServer by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the afpconfig file resides:

   ```
   sudo niload -r /config/AppleFileServer . < afpconfig
   ```

8. Type the 51_afpconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/51_afpconfigmigrator
   ```

9. In Server Admin, start AFP service.

WebObjects Applications and Frameworks

Make manual modifications to the new installed version of apache.conf if you want to reuse the previous server's web configuration.

Copy saved WebObjects applications and frameworks to:

- /Local/Library/WebServer
- /Library/WebServer

Tomcat Data

Restore Tomcat servlets to /Library/Tomcat/webapps.

Place any SOAP services you want to migrate in /Library/Tomcat/webapps/axis (a symlink to /System/Library/Axis/webapps/axis). Mac OS X Server version 10.3 includes a version of Axis that may be newer or older than the version you've been using.

IP Firewall Configuration

To migrate the IP firewall configuration:

1. Restore the firewallconfig file.
2. Open Server Admin and make sure that firewall service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to IPFilters by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the firewallconfig file resides:

   ```
   sudo niload -r /config/IPFilters . < firewallconfig
   ```

8. Type the 50_ipfwconfigmigrator command:

   ```
   sudo /System/Library/ServerSetup/MigrationExtras/
        50_ipfwconfigmigrator
   ```

9. In Server Admin, start firewall service.

DNS Configuration

Restore the file /etc/named.conf and the directory /var/named/ and all its contents.

DHCP Settings

To migrate the DHCP configuration:

1. Restore the DHCPconfig file.
2. Open Server Admin and make sure that DHCP service isn't running.
3. Open NetInfo Manager, located in /Applications/Utilities/.
4. Authenticate and go to /config.
5. Choose Directory > New SubDirectory to create a record in /config.
6. Change the name of the new record from newdirectory to dhcp by selecting the name property's value and editing it.
7. In the Terminal application, run the following command from the directory in which the DHCPconfig file resides:

   ```
   sudo niload -r /config/dhcp . < DHCPconfig
   ```

8. In Server Admin, start DHCP service.

User Data

Restore saved user data files.

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

QuickTime Streaming Server Files and Folders

Follow instructions in the QuickTime Streaming Server administration guide to reuse files and folders saved from /Library/QuickTimeStreaming/.

Step 8: Migrate Macintosh Manager Information

Move the Preferences folders in user home directories from ~/Library/Preferences to ~/Library/Classic/Preferences if you want to preserve existing preferences. If you don't move the Preferences folder, users can log in, but all application preferences are new, not reused.

Restore the following folders:

- /Library/Macintosh Manager/Multi-User Items/
- /Library/Macintosh Manager/Preferences/

Step 9: Set up share points and privileges

Re-create the share points and privileges as required.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

Step 10: Test the new server

To test the new server:

1. Open Workgroup Manager and inspect user and group accounts.
2. Open Server Admin and inspect settings for services whose configuration data you migrated.

Migrating From Mac OS X Server Version 1.2

4

Use the instructions in this chapter when you need to migrate data from a version 1.2 server.

This chapter tells you what you can migrate, and then explains how to migrate by reusing your existing server hardware or by moving to a different computer.

Understanding What You Can Migrate

"Migrating in Place From Version 1.2" on page 61 and "Migrating to a New Server From Version 1.2" on page 71 describe how to reuse the following data with version 10.3:

- FTP configuration files
- WebObjects applications and frameworks
- User data, including home directories
- QuickTime Streaming Server files and directories
- Macintosh Manager data
- User and group accounts

If you're using any of the following, make a note of any settings you want to continue to use, then see the document indicated for instructions on re-creating the settings after using the instructions in this chapter.

To set up	See the
Computer accounts (known as workstation accounts in version 1.2)	User management guide
AFP and NFS services	File services administration guide
Print service	Print service administration guide
Network services: DHCP, DNS, or Firewall	Network services administration guide
Web service	Web technologies administration guide

You can't migrate NetBoot images created prior to Mac OS X Server version 10.2. Re-create your old images using the default startup images provided with Mac OS X Server version 10.3.

Tools You Can Use

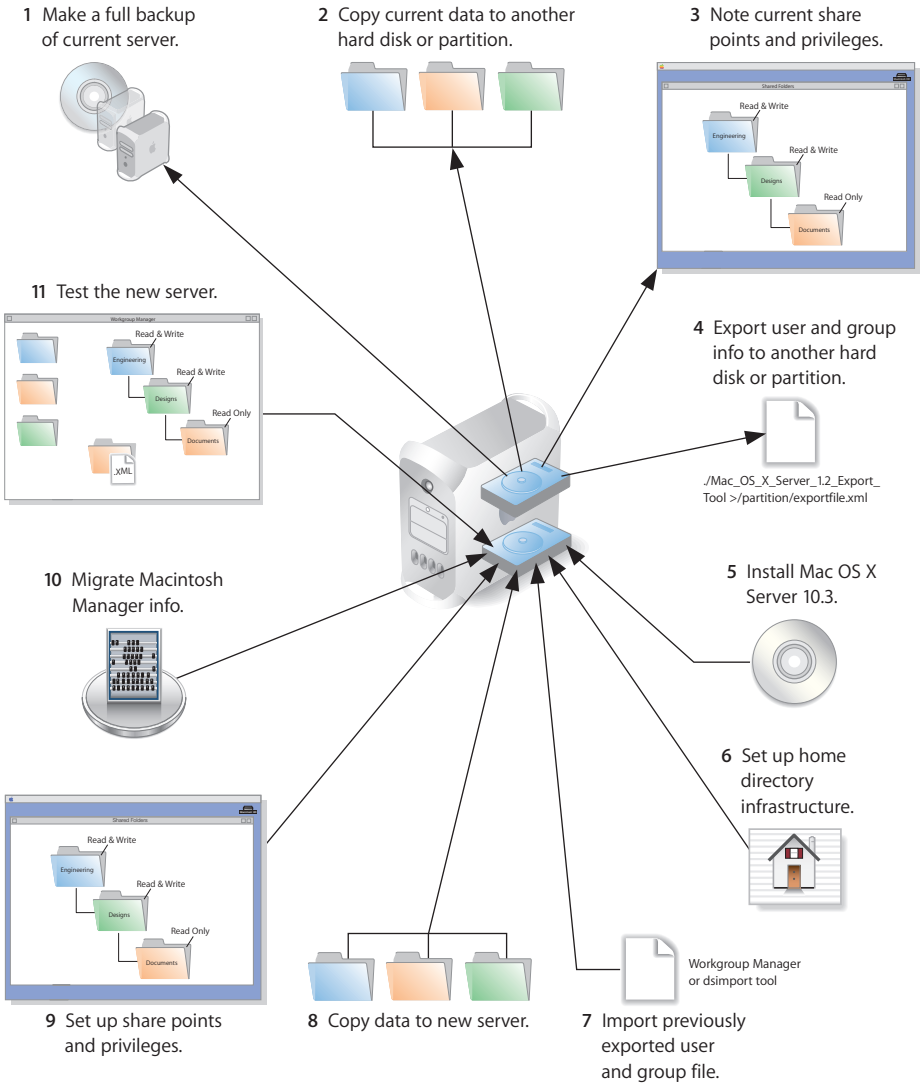
Several utilities are available for use during migration:

- You use a command-line tool called Mac_OS_X_Server_1.2_Export_Tool to export version 1.2 users and groups to an XML export file.
- You use Workgroup Manager in version 10.3 to import users and groups from the file.
- You use the Macintosh Manager migration utility to migrate Mac OS 9 client management settings. Built in to Macintosh Manager version 2.2, this utility automatically migrates user and group account information to Macintosh Manager 2.2 and migrates user documents and preferences to user home directories.

Instructions in the following sections explain when and how to use these utilities.

Migrating in Place From Version 1.2

To install Mac OS X Server version 10.3 on a computer running version 1.2, follow the instructions in this section. Make sure that the computer meets the minimum requirements for version 10.3; see page 7.



Step 1: Make a full backup of your current server
Use your current backup program to create a backup copy of your version 1.2 server.

Step 2: Copy current data to another hard disk or partition
Save all the data files that you want to reuse with Mac OS X Server version 10.3. You can keep them on the same computer, but make sure you place them on a disk or partition that won't be overwritten when you do the clean 10.3 installation.

FTP Configuration Files

To migrate your FTP settings, save these configuration files:

In this directory	Save these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

WebObjects Applications and Frameworks

Save WebObjects applications and frameworks located in:

- /Local/Library/WebServer
- /Library/WebServer

Save a copy of webobjects.conf for reference if you want to modify the new version of apache.conf to reproduce your current settings.

For more information about migrating WebObjects data, see the Java Converter documentation on the WebObjects 5 Developer disc.

User Data

Save any user data files you want to reuse, especially home directory folders.

Macintosh Manager Data

If you use Macintosh Manager and want to continue using it, you'll use the Macintosh Manager version 2.2 built-in migration utility in step 10. The migration utility automatically migrates user and group account information to Macintosh Manager 2.2 and migrates user documents and preferences to user home directories, so you'll use the utility after importing users and setting up their home directories.

To prepare data for the migration utility:

1. Open the Macintosh Manager 1.x administration application and log in to the version 1.2 server using an administrator account.
2. After connecting, verify the users and workgroups using the option in the File menu. After the consistency check is complete, quit the application.

   Note: User accounts that exist only in Macintosh Manager and not in the version 1.2 user database won't be migrated. These users will appear in the migration log file, as described in step 10.
3. Make copies of the following folders, which reside in the share point named Macintosh Manager on an HFS Plus volume:

For	Copy the folder named
Macintosh Manager 1.0-1.0.x	Macintosh Manager Items
Macintosh Manager 1.1-1.x	Multi-User Items

4. Make a copy of the Users folder in the Macintosh Manager share point.

QuickTime Streaming Server Files and Folders

Save files and folders in /Library/QuickTimeStreaming/.

For more information about migrating QTSS, see the QuickTime Streaming Server administration guide.

Step 3: Note current share points and privileges

If your version 1.2 server has share points and privileges you want to re-create on the new server, make a note of them. Note which share points are for home directories.

Step 4: Export user and group information

You use a command-line tool called Mac_OS_X_Server_1.2_Export_Tool to export user and group information. The tool is located on the version 10.3 server installation disc in /Welcome to Mac OS X Server/Migration Tools/

When you run the tool, you must save the exported information in a file with the extension ".xml" on a partition or disk other than the server partition.

To export user and group information:

1. Insert the installation disc.
2. Log in using the root account.
3. Open the Terminal application.
4. Navigate to the Migration Tools folder by entering

   ```
   cd "/<disc-name>/Welcome to Mac OS X Server/Migration Tools/"
   ```

5. Run the tool and save the results in an XML file on a partition other than the server partition. For example:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool > /MyPartition/MyExportFile.xml
   ```

   You can limit the user and group accounts exported to a specific range. To do this, use the -u and -g command-line arguments. For example, to export only user accounts that have a user ID in the range of 100 to 199, and to export all groups, use the following command:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool -u 100,199 > exported-ug.xml
   ```

   To export all user accounts, but limit the exported groups to those that have a group ID in the range of 200 to 500, use this command:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool -g 200,500 > exported-ug.xml
   ```

   You can also use -u and -g options in the same command:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool -u 800,899 -g 100,199 >
       exported-ug.xml
   ```

   The ID range must contain two numbers separated by a comma and must not contain any spaces.

   Note: The export tool remaps users in primary group 80 to primary group 20 for security reasons. To override this behavior, use the -x command-line option.

6. Check the partition where you saved the export file and make sure it's there.

   When you export users, encrypted passwords are exported. If you want to reset passwords, you can do so using Workgroup Manager, as described in step 7.

Step 5: Install Mac OS X Server version 10.3

Follow the instructions in the getting started guide for performing a clean installation of Mac OS X Server version 10.3.

If you've been using Macintosh Manager to manage Mac OS 9 users and want to continue doing so, also install Macintosh Manager 2.2.

Step 6: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. In Workgroup Manager on the computer from which you'll import users, click Accounts then open the directory into which you'll import users.
5. Optionally, define a preset that sets up default home directory settings for users.

   You can also use the preset to specify other default settings you want imported users to inherit, such as password validation settings, mail settings, and so forth.

Step 7: Import previously exported users and groups

You can use Workgroup Manager or the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions.

To import users and groups using Workgroup Manager:

1. Place the export file(s) you created in step 4 in a location accessible from your server.
2. If you want imported users to have passwords validated using Open Directory authentication, you can set that up in the preset you defined in step 6. Enable the password option that forces users to change their passwords the next time they log in.

   You can also change password settings using Workgroup Manager after you've finished importing users.
3. In Workgroup Manager, click the Accounts button.
4. Click the globe icon in the toolbar to open the directory into which you want to import accounts.
5. Click the lock to authenticate as domain administrator.
6. Choose Server > Import, select the import file, and specify import options.

   If you're importing user accounts and using a preset, make sure you identify the preset.
7. Click Import.

8 To create home directories for imported users, you have several options.

Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.

Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.

A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 8: Restore saved data

Copy the files you want to reuse from their backup location.

FTP Configuration Files

Copy saved FTP configuration files to:

- /Library/FTPServer/Configuration/
- /Library/FTPServer/Messages/

WebObjects Applications and Frameworks

Make manual modifications to the new installed version of apache.conf if you want to reuse the previous server's web configuration.

Copy saved WebObjects applications and frameworks to:

- /Local/Library/WebServer
- /Library/WebServer

User Data

Restore saved user data files, including home directories. Instructions for restoring Macintosh Manager data are in step 10.

Place home directories in locations that match the locations in the imported user records. If necessary, use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

QuickTime Streaming Server Files and Folders

Follow instructions in the QuickTime Streaming Server administration guide to reuse files and folders saved from /Library/QuickTimeStreaming/.

Step 9: Set up share points and privileges

Re-create the share points and privileges as required.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users might have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

Step 10: Migrate Macintosh Manager Information

To migrate Macintosh Manager data:

1. Set up a remote Macintosh Manager administrator computer by installing Macintosh Manager administrator and client software from the Administration Tools disc onto a Mac OS 9.2 computer.

   The computer should have access to the same printers and applications you want to use for your client computers so you can easily create lists of allowed applications and printer lists for the clients. The computer can have access to more printers and applications than its clients, but not fewer.
2. Open the Macintosh Manager administration application on the Mac OS 9.2 computer and connect to the version 10.3 server. Macintosh Manager opens with a default (blank) database. Without making changes, quit the application.

   This step ensures that the application automatically looks for the 10.3 server the next time it's opened.
3. Open Server Admin on the version 10.3 server and make sure that no services are running.
4. In the Macintosh Manager share point (/Library/Macintosh Manager/), create a new folder called Old MM Items:

   /Library/Macintosh Manager/Old MM Items

5 Restore the contents of the Macintosh Manager share point you backed up earlier from the ASIP server.

Place the Users folder just under the Macintosh Manager share point:

/Library/Macintosh Manager/Users/

Place any of the following folders in the following table into:

/Library/Macintosh Manager/Old MM Items/

For	Move this folder to Old MM Items
Macintosh Manager 1.0-1.0.x	Macintosh Manager Items
Macintosh Manager 1.1-1.x	Multi-User Items

6 Open the Terminal application and execute the following command:

```
sudo chown -R mmuser:admin /Library/Macintosh\ Manager
    /Old\ MM\ Items/
```

You can also use quotation marks to handle the spaces in the folder names:

```
sudo chown -R mmuser:admin "/Library/Macintosh Manager/Old MM Items/"
```

7 In Server Admin, start AFP and enable Macintosh Manager.

To start AFP, select it in the Computers & Services list and click Start Service.

To enable Macintosh Manager, select the server name in the Computers & Services list, click Settings, click Advanced, and select Enable Macintosh Manager.

8 Make sure you have enough disk space on the home directory volume for user documents and settings.

Estimate the number of megabytes of data in the Macintosh Manager User folders. Note the size of the Users folder. Subtract from it the size of the Groups folder inside the Users folder. If you used multiple workgroup storage volumes, combine results from all of them.

9 The server and each client computer have script settings that designate the primary language for each computer. Make sure that these three language script settings match:

- The default script for logging in and using the Macintosh Manager 2.2 administration program. For Mac OS X Server, use the International pane of System Preferences to change this setting. On Mac OS 9, the script setting is determined by the localization of the current system.
- The script setting for the old Macintosh Manager database, determined by the localization of the system the database was created on.
- The script setting in the "Encoding for older clients" pop-up menu in settings for Apple file service in Server Admin on the version 10.3 server. Don't change this setting after migration.

10 Make sure all the user home directories exist. Use Workgroup Manager or the createhomedir tool to create them.

11 On the remote Macintosh Manager 2.2 administrator computer, open the Macintosh Manager 2.2 administration application. Once the correct server is found by Macintosh Manager, log in as an administrator.

Note: Allow the application to locate the server on its own. If the server can't be found or if another server is selected by default, quit the application, move the Old MM Items folder to the Desktop, and go back to the first step in this procedure.

12 Click Yes when asked whether you want to convert previous Macintosh Manager settings.

13 Choose a password creation option.

"Use a randomly generated password" creates a unique password for each user. The password appears in the log file.

"Use this password" lets you specify one password for all users.

14 Click Update. The migration utility starts migrating data, displaying a progress bar during the process.

If two user documents with identical file names are found on separate volumes, both documents are copied to the home directory and the name of one of the documents is modified.

If two sets of user settings are stored on separate volumes, the settings with the most recent data are copied to the home directory.

When the migration utility finds a managed client user that already exists in a Mac OS X Server directory, the action it takes depends on the user login setting and whether the user has a home directory:

If login is	The migration utility
Enabled	Assumes it is the same user and copies the user documents to the home directory. If the user account resides in a shared Open Directory directory on a different server, user documents are copied to the home directory if the volume with the home directory can be mounted.
Disabled	Enables login for the user, sets a password, and copies user documents to the home directory.

15 Quit the Macintosh Manager administration application after migration is complete so that information is written to the Macintosh Manager database.

16 Check the log file after migration is complete. It's called MM Migration Log.txt. The file resides at the root of the startup volume on the Mac OS 9 computer.

Use the log file to determine whether you need to:

- Set a password for a user
- Create a home directory for a user
- Clean up documents for a user when more than one workgroup volume document was copied to a home directory
- Check to see whether any user documents were not copied

17 Move the Preferences folders in Mac OS 9 user home directories from ~/Library/Preferences to ~/Library/Classic/Preferences if you want to preserve existing preferences. If you don't move the Preferences folder, users can log in, but all application preferences are new, not reused.

Step 11: Test the new server

To test the new server:

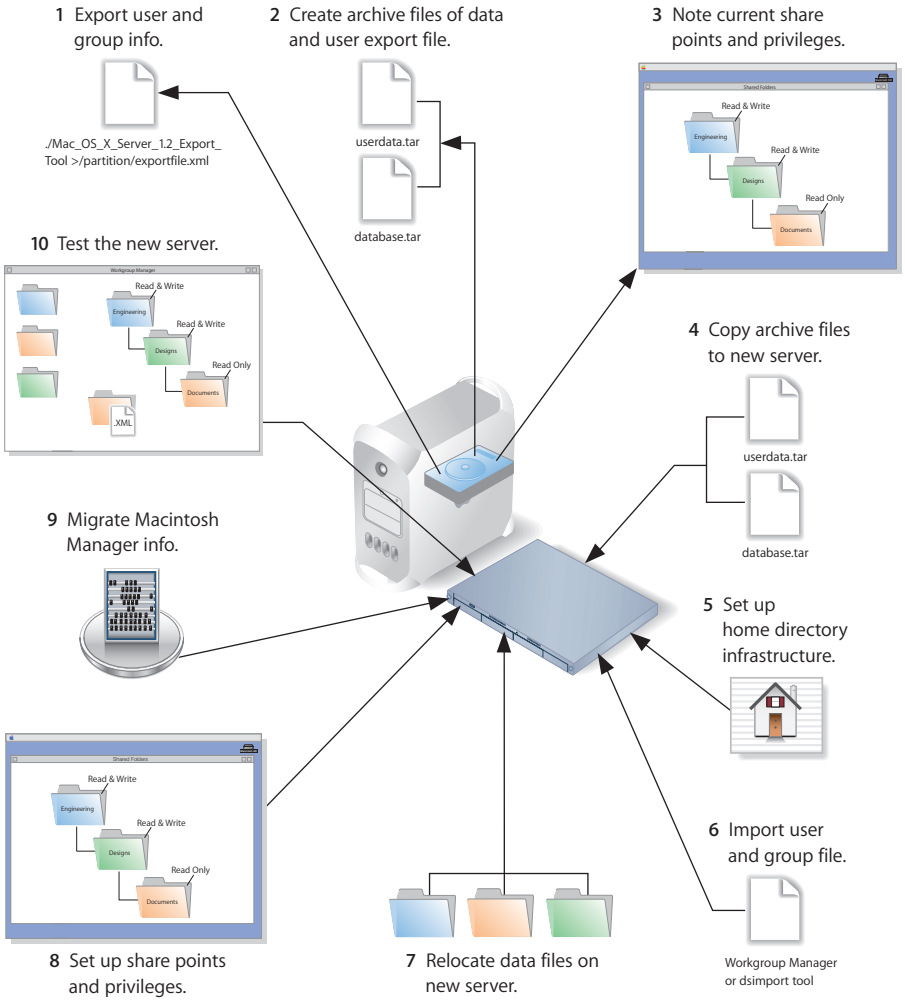
1 Open Workgroup Manager and inspect user and group accounts.

2 Open Server Admin and inspect settings for services whose configuration data you migrated.

3 Check Macintosh Manager and Workgroup Manager settings for managed Mac OS 9 clients you migrated. Log in to managed client computers to make sure that settings work as expected.

Migrating to a New Server From Version 1.2

To move data from a Mac OS X Server version 1.2 computer to a computer with Mac OS X Server version 10.3 installed, follow the instructions in this section. If you've been using Macintosh Manager to manage Mac OS 9 users and want to continue doing so, also install Macintosh Manager 2.2 on the version 10.3 computer.



Step 1: Export user and group information

You use a command-line tool called Mac_OS_X_Server_1.2_Export_Tool to export user and group information.

The tool is located on the version 10.3 server installation disc in /Welcome to Mac OS X Server/Migration Tools/

When you run the tool, you must save the exported information in a file with the extension ".xml" on a partition or disk other than the server partition.

To export user and group information:

1. Insert the installation disc.
2. Log in using the root account.
3. Open the Terminal application.
4. Navigate to the Migration Tools folder by entering:

   ```
   cd "/<disc-name>/Welcome to Mac OS X Server/Migration Tools/"
   ```

5. Run the tool and save the results in an XML file on a partition other than the server partition. For example:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool > /MyPartition/MyExportFile.xml
   ```

   You can limit the user and group accounts exported to a specific range. To do this, use the -u and -g command-line arguments. For example, to export only user accounts that have a user ID in the range of 100 to 199, and to export all groups, use the following command:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool -u 100,199 > exported-ug.xml
   ```

   To export all user accounts, but limit the exported groups to those that have a group ID in the range of 200 to 500, use this command:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool -g 200,500 > exported-ug.xml
   ```

   You can also use -u and -g options in the same command:

   ```
   ./Mac_OS_X_Server_1.2_Export_Tool -u 800,899 -g 100,199 >
       exported-ug.xml
   ```

   The ID range must contain two numbers separated by a comma and must not contain any spaces.

   Note: The export tool remaps users in primary group 80 to primary group 20 for security reasons. To override this behavior, use the -x command-line option.

6. Check the location where you saved the export file and make sure it is there.

   When you export users, encrypted passwords are exported. If you want to reset passwords, you can do so using Workgroup Manager, as described in step 6.

Step 2: Create archive files

Save all the data files that you want to reuse with Mac OS X Server version 10.3. In step 4 you'll move the files described below, as well as the export file created in step 1, to the version 10.3 computer.

For large amounts of data, you may want to create one or more tar archives, using the `tar` command in the Terminal application; tar archives can be transferred to the version 10.3 server using FTP. Use the `-c` flag of the `tar` command to indicate you want to create a new archive file in tar format. Use the `-f` flag to identify the archive file name. Use the `-v` (verbose) flag to view useful information as the command executes:

```
tar -cvf /MyHFSVolume/MM.tar /MyHFSVolume/Macintosh\ Manager
```

The escape character (\ in the example above) indicates a space in the name. You can also use quotation marks to handle embedded spaces:

```
tar -cvf /MyHFSVolume/MM.tar "/MyHFSVolume/Macintosh Manager"
```

FTP Configuration Files

To migrate your FTP settings, save these configuration files:

In this directory	Save these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

WebObjects Applications and Frameworks

Save WebObjects applications and frameworks located in:

- /Local/Library/WebServer
- /Library/WebServer

Save a copy of webobjects.conf for reference if you want to modify the new version of apache.conf to reproduce your current settings.

For more information about migrating WebObjects data, see the Java Converter documentation on the WebObjects 5 Developer disc.

User Data

Save any user data files you want to reuse, especially home directory folders.

Macintosh Manager Data

If you use Macintosh Manager and want to continue using it, make a copy of the following folders, which reside in the share point named Macintosh Manager on an HFS Plus volume:

For	Copy the folder named
Macintosh Manager 1.0-1.0.x	Macintosh Manager
Macintosh Manager 1.1-1.x	Multi-User Items
All Macintosh Manager versions	Users

To help you migrate data for individual managed users, Macintosh Manager version 2.2 has a built-in migration utility, which you'll use in step 9. Because the migration utility automatically migrates user and group account information to Macintosh Manager 2.2, and migrates user documents and preferences to user home directories, you'll use the utility after importing users and setting up their home directories.

QuickTime Streaming Server Files and Folders

Save files and folders in /Library/QuickTimeStreaming/.

For more information about migrating QTSS, see the QuickTime Streaming Server administration guide.

Step 3: Note current share points and privileges

If your version 1.2 server has share points and privileges you want to re-create on the new server, make a note of them. Note which share points are for home directories.

Step 4: Copy archive files to the new server

Transfer the files you saved in steps 1 and 2 to the version 10.3 server.

To transfer tar files using FTP:

1. Use Server Admin on the new server to start FTP service.
2. Set up sharing for a folder into which you'll place files you transfer from the 1.2 computer.
3. On the version 1.2 server, use FTP service to copy the tar files to the version 10.3 computer.
4. Double-click a tar file to extract its contents.

Step 5: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. In Workgroup Manager on the computer from which you'll import users, click Accounts then open the directory into which you'll import users.
5. Optionally, define a preset that sets up default home directory settings for users.

   You can also use the preset to specify other default settings you want imported users to inherit, such as password validation settings, mail settings, and so forth.

Step 6: Import previously exported users and groups

You can use Workgroup Manager or the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions.

To import users and groups using Workgroup Manager:

1. Place the export file(s) you created in step 1 in a location accessible from your server.
2. If you want imported users to have passwords validated using Open Directory authentication, you can set that up in the preset you defined in step 5. Enable the password option that forces users to change their passwords the next time they log in.

   You can also change password settings using Workgroup Manager after you've finished importing users.
3. In Workgroup Manager, click the Accounts button.
4. Click the globe icon in the toolbar to open the directory into which you want to import accounts.
5. Click the lock to authenticate as domain administrator.
6. Choose Server > Import, select the import file, and specify import options.

   If you're importing user accounts and using a preset, make sure you identify the preset.
7. Click Import.

8 To create home directories for imported users, you have several options.

Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.

Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.

A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 7: Relocate saved data files

Place the files you saved from your version 1.2 server on the version 10.3 server.

FTP Configuration Files

Copy saved FTP configuration files to:

- /Library/FTPServer/Configuration/
- /Library/FTPServer/Messages/

WebObjects Applications and Frameworks

Make manual modifications to the new installed version of apache.conf if you want to reuse the previous server's web configuration.

Copy saved WebObjects applications and frameworks to:

- /Local/Library/WebServer
- /Library/WebServer

User Data

Restore saved user data files, including home directories. Instructions for restoring Macintosh Manager data are in step 9.

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

QuickTime Streaming Server Files and Folders

Follow instructions in the QuickTime Streaming Server administration guide to reuse files and folders saved from /Library/QuickTimeStreaming/.

Step 8: Set up share points and privileges

Re-create the share points and privileges as required.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

Step 9: Migrate Macintosh Manager Information

To migrate Macintosh Manager data:

1. Open the Macintosh Manager 1.x administration application and log in to the version 1.2 server using an administrator account. After connecting, verify the users and workgroups using the option on the File menu. After the consistency check is complete, quit the application.

   Note: User accounts that exist only in Macintosh Manager and not in the version 1.2 user database won't be migrated. These users will appear in the migration log file, as described later in this procedure.

2. Set up a remote Macintosh Manager administrator computer by installing Macintosh Manager administrator and client software from the Administration Tools disc onto a Mac OS 9.2 computer.

   The computer should have access to the same printers and applications you want to use for your client computers so you can easily create lists of allowed applications and printer lists for the clients. The computer can have access to more printers and applications than its clients, but not fewer.

3. Open the Macintosh Manager administration application on the Mac OS 9.2 computer and connect to the version 10.3 server. Macintosh Manager opens with a default (blank) database. Without making changes, quit the application.

   This step ensures that the application automatically looks for the 10.3 server the next time it's opened.

4. Open Server Admin on the version 10.3 server and make sure that no services are running.

5 In the Macintosh Manager share point (/Library/Macintosh Manager/), create a new folder called Old MM Items:

/Library/Macintosh Manager/Old MM Items

6 Place the folders you backed up earlier from the version 1.2 Macintosh Manager share point into the new Macintosh Manager share point.

Place the Users folder just under the Macintosh Manager share point:

/Library/Macintosh Manager/Users/

Place any of the following folders in the following table into:

/Library/Macintosh Manager/Old MM Items/

For	Move this folder to Old MM Items
Macintosh Manager 1.0-1.0.x	Macintosh Manager Items
Macintosh Manager 1.1-1.x	Multi-User Items

7 Open the Terminal application and execute the following command:

```
sudo chown -R mmuser:admin /Library/Macintosh\ Manager
     /Old\ MM\ Items/
```

You can also use quotation marks to handle the spaces in the folder names:

```
sudo chown -R mmuser:admin "/Library/Macintosh Manager/Old MM Items/"
```

8 In Server Admin, start AFP and enable Macintosh Manager.

To start AFP, select it in the Computers & Services list and click Start Service.

To enable Macintosh Manager, select the server name in the Computers & Services list, click Settings, click Advanced, and select Enable Macintosh Manager.

9 Make sure you have enough disk space on the home directory volume for user documents and settings.

Estimate the number of megabytes of data in the Macintosh Manager User folders. Note the size of the Users folder. Subtract from it the size of the Groups folder inside the Users folder. If you used multiple workgroup storage volumes, combine results from all of them.

10 The server and each client computer have script settings that designate the primary language for each computer. Make sure that these three language script settings match:
   - The default script for logging in and using the Macintosh Manager 2.2 administration program. For Mac OS X Server, use the International pane of System Preferences to change this setting. On Mac OS 9, the script setting is determined by the localization of the current system.
   - The script setting for the old Macintosh Manager database, determined by the localization of the system the database was created on.
   - The script setting in the "Encoding for older clients" pop-up menu in settings for Apple file service in Server Admin on the version 10.3 server. Don't change this setting after migration.

11 Make sure all the user home directories exist. Use Workgroup Manager or the createhomedir tool to create them.

12 On the remote Macintosh Manager 2.2 administrator computer, open the Macintosh Manager 2.2 administration application. Once the correct server is found by Macintosh Manager, log in as an administrator.

   Note: Allow the application to locate the server on its own. If the server can't be found, or another server is selected by default, quit the application, move the Old MM Items folder to the Desktop, and go back to the first step in this procedure.

13 Click Yes when asked whether you want to convert previous Macintosh Manager settings.

14 Choose a password creation option.

   "Use a randomly generated password" creates a unique password for each user. The password appears in the log file.

   "Use this password" lets you specify one password for all users.

15 Click Update. The migration utility starts migrating data, displaying a progress bar during the process.

If two user documents with identical file names are found on separate volumes, both documents are copied to the home directory and the name of one of the documents is modified.

If two sets of user settings are stored on separate volumes, the settings with the most recent data are copied to the home directory.

When the migration utility finds that a managed client user already exists in a Mac OS X Server directory, the action it takes depends on the user login setting and whether the user has a home directory:

If login is	The migration utility
Enabled	Assumes it is the same user and copies the user documents to the home directory. If the user account resides in a shared Open Directory directory on a different server, user documents are copied to the home directory if the volume with the home directory can be mounted.
Disabled	Enables login for the user, sets a password, and copies user documents to the home directory.

16 Quit the Macintosh Manager administration application after migration is complete so that information is written to the Macintosh Manager database.

17 Check the log file after migration is complete. It's called MM Migration Log.txt. The file resides at the root of the startup volume on the Mac OS 9 computer.

Use the log file to determine whether you need to:

- Set a password for a user
- Create a home directory for a user
- Clean up documents for a user when more than one workgroup volume document was copied to a home directory
- Check to see whether any user documents were not copied

18 Move the Preferences folders in Mac OS 9 user home directories from ~/Library/Preferences to ~/Library/Classic/Preferences if you want to preserve existing preferences. If you don't move the Preferences folder, users can log in, but all application preferences are new, not reused.

Step 10: Test the new server

To test the new server:

1. Open Workgroup Manager and inspect user and group accounts.
2. Open Server Admin and inspect settings for services whose configuration data you migrated.
3. Check Macintosh Manager and Workgroup Manager settings for managed Mac OS 9 clients you migrated. Log in to managed client computers to make sure that settings work as expected.

Migrating From AppleShare IP 5

Use this chapter when you need to migrate data from an AppleShare IP (ASIP) 6.2 or 6.3 server.

This chapter tells you what you can migrate, and then explains how to migrate by reusing your existing server hardware or by moving to a different computer.

Understanding What You Can Migrate

"Migrating in Place From ASIP" on page 85 and "Migrating to a New Server From ASIP" on page 96 describe how to reuse the following data with version 10.3:

- Web content
- Mail database
- FTP configuration files
- User data, including home directories
- Macintosh Manager data
- User and group accounts

If you're using any of the following, make a note of any settings you want to continue to use, then see the document indicated for instructions on re-creating the settings after using the instructions in this chapter.

To set up	See the
AFP service	File services administration guide
Print service	Print service administration guide
Widows services	Windows services administration guide

Tools You Can Use

Several utilities are available for use during migration:

- The AppleShare IP Migration utility can migrate users and groups, share points and privileges (when migrating in place only), and the mail database. You can use this tool to migrate all these items or only users and groups.

  If you're migrating only users and groups, the recommended approach is to use the user and group export facilities.

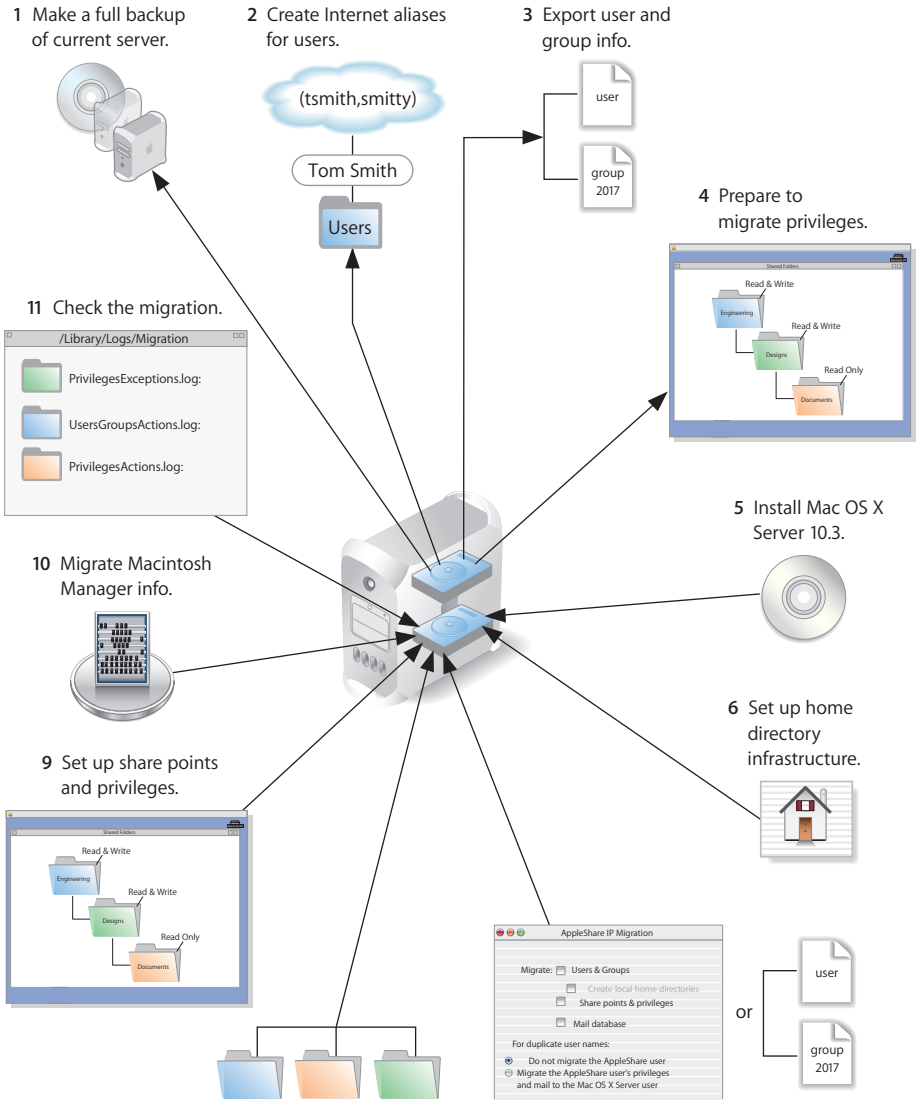
  If you're migrating Macintosh Manager data, or want to import users into a shared directory, use Workgroup Manager or the dsimport tool to import the users. The AppleShare IP Migration utility imports users only into the local directory.

- Instead of migrating users and groups with the AppleShare IP Migration utility, you can use an XML export file. Create the file using Web & File Admin in ASIP 6.2 or Mac OS Server Admin in ASIP 6.3. Import the file using Workgroup Manager in version 10.3.
- Use the Macintosh Manager migration utility to migrate Mac OS 9 client management settings. Built in to Macintosh Manager version 2.2, this utility automatically migrates user and group account information to Macintosh Manager 2.2 and migrates user documents and preferences to user home directories.

Instructions in the following sections explain when and how to use these utilities.

Migrating in Place From ASIP

To install Mac OS X Server version 10.3 on a computer running ASIP, follow the instructions in this section. Make sure that the computer meets the minimum requirements for version 10.3, described on page 7.



If you have a primary ASIP server and one or more secondary ASIP servers and you want to migrate all of them to version 10.3, synchronize all secondary servers with the primary server before starting migration. Migrate the primary server, then migrate the secondary servers. When migrating secondary servers, you can't use the AppleShare IP Migration utility.

Step 1: Make a full backup of your current server
Use your current backup program to create a backup copy of your ASIP server.

Step 2: Provide Internet Aliases (if necessary)
The AppleShare IP Migration utility uses the Internet alias in the ASIP user account to create the required short name for the version 10.3 user account. If no Internet alias exists, the migration utility generates one.

If you'll be using the AppleShare IP Migration utility, create an Internet alias for any ASIP user account that does not have one. To do this, use Mac OS Server Admin (in ASIP 6.3) or Web & File Admin (in ASIP 6.2).

If you're planning to migrate both primary and secondary ASIP servers, provide the Internet aliases on the primary server, then synchronize the secondary servers with the primary server.

Step 3: Export user and group information (if necessary)
If you won't use the AppleShare IP Migration utility to migrate users and groups, create an XML file of user and group accounts. Create the file using Web & File Admin in ASIP 6.2 or Mac OS Server Admin in ASIP 6.3.

Note: The AppleShare IP Migration utility lets you migrate passwords. When you import an XML file, you need to reset passwords using Workgroup Manager, as described in step 7.

To export user information from ASIP 6.3:

1. Open Mac OS Server Admin and log in to the server you want to administer. If you have secondary servers, use the primary server to export information.

   If you're exporting over 1000 users, increase the memory allocated to Mac OS Server Admin.
2. Click Users & Groups and choose Show Users & Groups List.
3. Select the users or groups in the list that you want to export. If you select a group, the individual users in the group are exported. Guest attributes can't be exported.
4. Click Users & Groups and choose Export Selected Items.
5. Save the exported file.

Step 4: Prepare to migrate privileges

On Mac OS X Server, groups can't own folders.

Before you migrate from ASIP, you can use Mac OS Server Admin (in ASIP 6.3), or Web & File Admin (in ASIP 6.2), to assign a new owner to any folders that are owned by a group.

If you use the AppleShare IP Migration utility to migrate share points and privileges, the ownership of any folders owned by a group is assigned to the administrator.

You can use Workgroup Manager after migration to change the owner, if required.

Step 5: Install Mac OS X Server version 10.3

To install the new server:

1. If you want to migrate Macintosh Manager data, complete the next step. Otherwise, skip to the third step.
2. Open the Macintosh Manager 1.x administration application and log in to the ASIP server using an administrator account.

   After connecting, verify the users and workgroups using the option on the File menu. After the consistency check is complete, quit the application.

   Note: User accounts that exist only in Macintosh Manager and not in ASIP's Users & Groups list won't be migrated. These users will appear in the migration log file, as described later in this procedure.
3. Use the Devices and Volumes tab in Apple System Profiler to determine the format of the disk or partition onto which you want to install version 10.3. If it's not formatted using HFS Plus, back up the partition, reformat it in HFS Plus, then restore the contents before installing version 10.3. If the partition is RAID formatted, check with the vendor for compatibility with Mac OS X.
4. Follow the instructions in the getting started guide for installing Mac OS X Server version 10.3. Select the hard disk or partition where ASIP (and, optionally, Macintosh Manager and At Ease for Workgroups) is installed as the location for the new version of the server. Make sure you click "Don't erase" when specifying a target volume using the Installer. When using Server Assistant, don't set up any services to start automatically.
5. If you've been using Macintosh Manager or At Ease for Workgroups to manage Mac OS 9 users and want to continue doing so, also install Macintosh Manager 2.2.

Step 6: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. If you'll import user and group accounts from an XML file using Workgroup Manager, optionally set up a preset. When you import users, you identify the preset, and the users inherit settings associated with the preset.

   In Workgroup Manager on the computer from which you'll import users, click Accounts then open the directory into which you'll import users.

   Define the preset. You can specify default home directory settings for users, password validation settings, mail settings, and so forth.

Step 7: Run the AppleShare IP Migration utility or use Workgroup Manager to import users and groups

If you're migrating Macintosh Manager or want to import users into a shared directory, use Workgroup Manager to import the users. The AppleShare IP Migration utility imports users only into the local directory.

To use the AppleShare IP Migration utility:

1. Open the AppleShare IP Migration utility. It's located in /Applications/Utilities.
2. Click the lock in the lower-left corner to authenticate as an administrator.
3. Select migration options.

   Select the option that creates local home directories for the users you're migrating. The users are migrated to the local directory on the server where you're running the migration utility.

   You can migrate users and groups without migrating share points and privileges or the mail database, but you can't migrate share points and privileges or the mail database without migrating users and groups.

When migrating users and groups, the migration utility checks to see if a duplicate user exists in a parent domain on a different computer. To determine what happens when a duplicate user name occurs, choose an option:

- **Don't migrate the AppleShare user:** The ASIP data is reassigned to the administrator and the mail inbox is converted to a text file. (Choose this option if you're migrating a primary server.)
- **Migrate the AppleShare user's privileges and mail:** The ASIP data is assigned to the existing user in the parent domain and the ASIP mail is made available to this user. (Choose this option if you're migrating a secondary server.)

Note: If a duplicate group exists in a parent domain on another computer, the membership of this group is not updated.

4 Click Migrate.

5 Locate the file Users & Groups Data File and click Choose. (The default location is the Preferences folder in the System Folder.)

6 If you're migrating the mail database, locate the file AppleShare IP Mail 6.0 Data and click Choose.

7 During migration, the utility displays a progress bar and status information. When migration is complete, click Quit.

8 Examine the log files, which are located in /Library/Logs/Migration/:

- **UserGroupsActions.log:** Steps taken during user and group migration.
- **UserGroupsExceptions.log:** Steps taken or not taken during user and group migration that may require additional administrative attention. For example, the log records duplicate users detected and the assignment of data to the administrator or to an existing user.
- **PrivilegesActions.log:** Steps taken during privileges migration.
- **PrivilegesExceptions.log:** Steps taken or not taken during privileges migration that may require additional administrative attention.
- **MailActions.log:** Steps taken during mail migration.
- **MailExceptions.log:** Steps taken or not taken during mail migration that may require additional administrative attention.

9 In Workgroup Manager, change home directory settings from local to network for all migrated users.

10 Using Workgroup Manager, examine a sample of users and groups to see if the settings were migrated correctly.

Also examine a sample of share points and privileges to make sure any settings you migrated were migrated correctly.

11 Examine a sample of migrated mail accounts.

To import users and groups using Workgroup Manager:

1. Place the export file(s) you created in step 3 in a location accessible from your server.
2. If you want imported users to have passwords validated using Open Directory authentication, you can set that up in the preset you defined in step 6. Enable the password option that forces users to change their passwords the next time they log in.

   You can also change password settings using Workgroup Manager after you've finished importing users.
3. In Workgroup Manager, click the Accounts button.
4. Click the globe icon in the toolbar to open the directory into which you want to import accounts.
5. Click the lock to authenticate as domain administrator.
6. Choose Server > Import, select the import file, and specify import options.

   If you're importing user accounts and using a preset, make sure you identify the preset.
7. Click Import.

You can also use the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions.

To create home directories for imported users:

You have several options:

- Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.
- Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.
- A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 8: Copy data to the new server

Set up the data you want to reuse.

Web Content

Copy static webpages to /Library/Webserver/Documents/.

For dynamic content, consider recoding your existing CGIs using the native Mac OS X Server web server capabilities. You can also run AFIP CGIs based on AppleScript, and it is no longer necessary to have the Classic environment available to run them; run the ACGI Enabler (in /Applications/Utilities/) to set up Apache support for these legacy CGIs.

FTP Configuration Files

To migrate your FTP settings, copy configuration files to the Mac OS X Server directory indicated:

In this directory	Place these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

User Data

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

Instructions for restoring Macintosh Manager data are in step 10.

Step 9: Set up share points and privileges

Re-create the share points and privileges as required. Remember that a group can't own a folder in Mac OS X Server.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

Step 10: Migrate Macintosh Manager Information

To migrate Macintosh Manager data:

1. Set up a remote Macintosh Manager administrator computer by installing Macintosh Manager administrator and client software from the Administration Tools disc onto a Mac OS 9.2 computer.

   The computer should have access to the same printers and applications you want to use for your client computers so you can easily create lists of allowed applications and printer lists for the clients. The computer can have access to more printers and applications than its clients, but not fewer.

2. Open the Macintosh Manager administration application on the Mac OS 9.2 computer and connect to the version 10.3 server. Macintosh Manager opens with a default (blank) database. Without making changes, quit the application.

   This step ensures that the application automatically looks for the 10.3 server the next time it's opened.

3. Open Server Admin on the version 10.3 server and make sure that Macintosh Manager and AFP services are not running. This step is very important to the success of user document migration.

4. In the Macintosh Manager share point (/Library/Macintosh Manager/), create a new folder called Old MM Items:

   /Library/Macintosh Manager/Old MM Items

5. Copy the contents of the Macintosh Manager share point from the ASIP server to the Macintosh Manager share point on the version 10.3 server.

   Place the Users folder just under the Macintosh Manager share point:

   /Library/Macintosh Manager/Users/

   Place any of the following folders in the following table into:

   /Library/Macintosh Manager/Old MM Items/

For	Move this folder to Old MM Items
Macintosh Manager 1.0-1.0.x	Macintosh Manager Items
Macintosh Manager 1.1-1.x	Multi-User Items (Copy to the ASIP Server Desktop before copying to the version 10.3 server.)
At Ease for Workgroups 5.0	At Ease Items WG 5.0

6 Open the Terminal application and execute the following command:

```
sudo chown -R mmuser:admin /Library/Macintosh\ Manager
    /Old\ MM\ Items/
```

You can also use quotation marks to handle the spaces in the folder names:

```
sudo chown -R mmuser:admin "/Library/Macintosh Manager/Old MM Items/"
```

7 In Server Admin, start AFP and enable Macintosh Manager.

To start AFP, select it in the Computers & Services list and click Start Service.

To enable Macintosh Manager, select the server name in the Computers & Services list, click Settings, click Advanced, and select Enable Macintosh Manager.

8 Make sure you have enough disk space on the home directory volume for user documents and settings.

Estimate the number of megabytes of data in the Macintosh Manager User folders. Note the size of the Users folder. Subtract from it the size of the Groups folder inside the Users folder. If you used multiple workgroup storage volumes, combine results from all of them.

9 The server and each client computer have script settings that designate the primary language for each computer. Make sure that these three language script settings match:

- The default script for logging in and using the Macintosh Manager 2.2 administration program. For Mac OS X Server, use the International pane of System Preferences to change this setting. On Mac OS 9, the script setting is determined by the localization of the current system.
- The script setting for the old Macintosh Manager or At Ease for Workgroups database, determined by the localization of the system the database was created on.
- The script setting in the "Encoding for older clients" pop-up menu in settings for Apple file service in Server Admin on the version 10.3 server. Don't change this setting after migration.

10 Make sure all the user home directories exist. Use Workgroup Manager or the createhomedir tool to create them.

11 On the remote Macintosh Manager 2.2 administrator computer, open the Macintosh Manager 2.2 administration application. Once the correct server is found by Macintosh Manager, log in as an administrator.

Note: Allow the application to locate the server on its own. If the server can't be found or another server is selected by default, quit the application, move the Old MM Items folder to the Desktop, and go back to the first step in this procedure.

12 Click Yes when asked whether you want to convert previous Macintosh Manager settings.

13 Choose a password creation option.

"Use a randomly generated password" creates a unique password for each user. The password appears in the log file.

"Use this password" lets you specify one password for all users.

14 Click Update. The migration utility starts migrating data, displaying a progress bar during the process.

If two user documents with identical file names are found on separate volumes, both documents are copied to the home directory and the name of one of the documents is modified.

if two sets of user settings are stored on separate volumes, the settings with the most recent data are copied to the home directory.

When the migration utility finds that a managed client user already exists in a Mac OS X Server directory, the action it takes depends on the user login setting and whether the user has a home directory:

If login is	The migration utility
Enabled	Assumes it is the same user and copies the user documents to the home directory. If the user account resides in a shared Open Directory directory on a different server, user documents are copied to the home directory if the volume with the home directory can be mounted.
Disabled	Enables login for the user, sets a password, and copies user documents to the home directory.

15 Quit the Macintosh Manager administration application after migration is complete so that information is written to the Macintosh Manager database.

16 Check the log file after migration is complete. It's called MM Migration Log.txt. The file resides at the root of the startup volume on the Mac OS 9 computer.

Use the log file to determine whether you need to:

- Set a password for a user
- Create a home directory for a user
- Clean up documents for a user when more than one workgroup volume document was copied to a home directory
- Check to see whether any user documents were not copied

17 Move the Preferences folders in Mac OS 9 user home directories from ~/Library/Preferences to ~/Library/Classic/Preferences if you want to preserve existing preferences. If you don't move the Preferences folder, users can log in, but all application preferences are new, not reused.

Step 11: Test the new server

To test the new server:

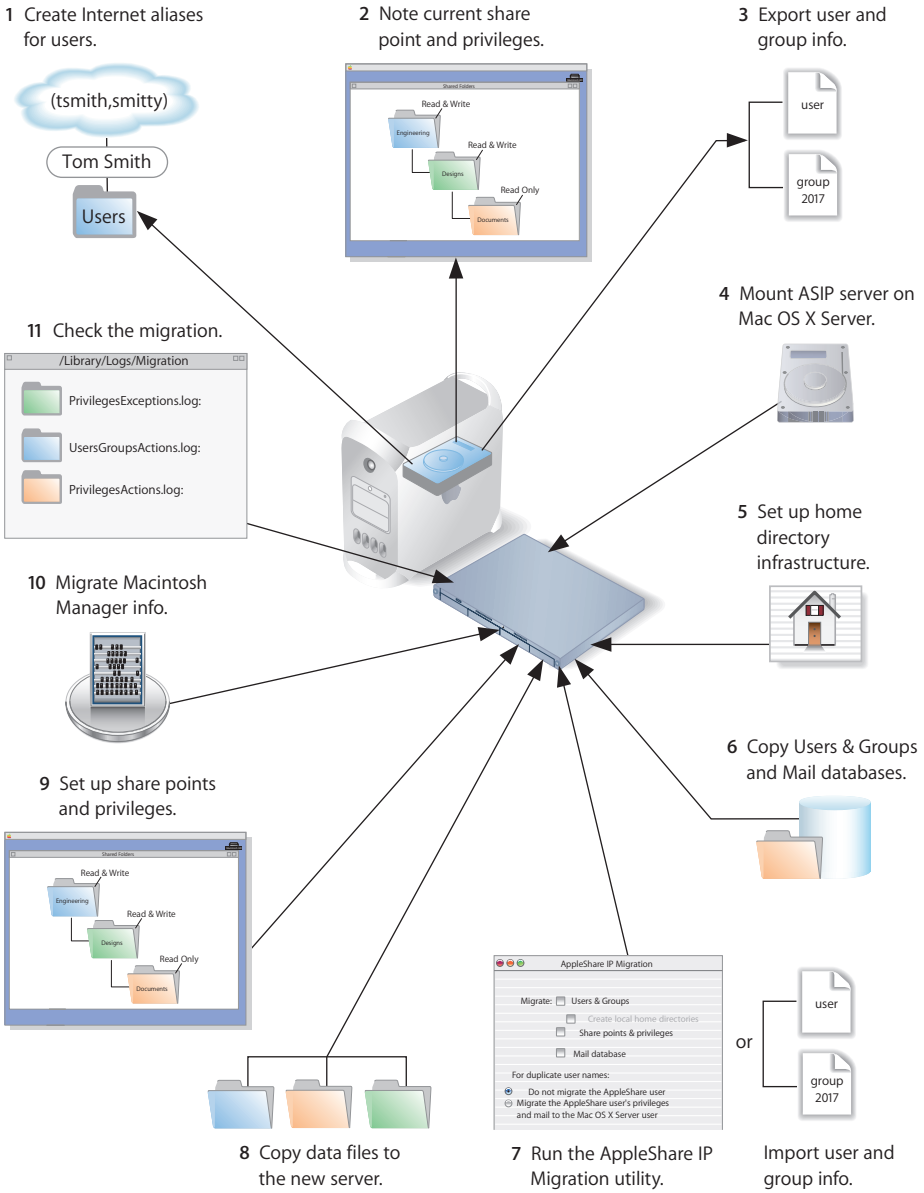
1 Open Workgroup Manager and inspect user and group accounts.

2 Open Server Admin and inspect settings for services whose configuration data you migrated.

3 Check Macintosh Manager and Workgroup Manager settings for managed Mac OS 9 clients you migrated. Log in to managed client computers to make sure that settings work as expected.

Migrating to a New Server From ASIP

To move data from an ASIP 6.2 or 6.3 computer to a computer with Mac OS X Server version 10.3 installed, follow the instructions in this section. If you've been using Macintosh Manager or At Ease for Workgroups to manage Mac OS 9 users and want to continue doing so, also install Macintosh Manager 2.2 on the version 10.3 computer.



If you have a primary ASIP server and one or more secondary ASIP servers and you want to migrate all of them to version 10.3, synchronize all secondary servers with the primary server before starting migration. Migrate the primary server, then migrate the secondary servers. When migrating secondary servers, you can't use the AppleShare IP Migration utility.

Step 1: Provide Internet Aliases (if necessary)
The AppleShare IP Migration utility uses the Internet alias in the ASIP user account to create the required short name for the version 10.3 user account. If no Internet alias exists, the migration utility generates one.

If you'll be using the AppleShare IP Migration utility, create an Internet alias for any ASIP user account that does not have one. To do this, use Mac OS Server Admin (in ASIP 6.3) or Web & File Admin (in ASIP 6.2).

If you're planning to migrate both primary and secondary ASIP servers, provide the Internet aliases on the primary server, then synchronize the secondary servers with the primary server.

Step 2: Note current share points and privileges
If your version ASIP server has share points and privileges you want to re-create on the new server, make a note of them. Note which share points are for home directories. Remember that a folder can't be owned by a group in Mac OS X Server.

Step 3: Export user and group information (if necessary)
If you won't use the AppleShare IP Migration utility to migrate users and groups, create an XML file of user and group accounts. Create the file using Web & File Admin in ASIP 6.2 or Mac OS Server Admin in ASIP 6.3.

Note: The AppleShare IP Migration utility lets you migrate passwords. When you import an XML file, you need to reset passwords using Workgroup Manager, as described in step 7.

To export user information from ASIP 6.3:

1. Open Mac OS Server Admin and log in to the server you want to administer. If you have secondary servers, use the primary server to export information.

   If you're exporting over 1000 users, increase the memory allocated to Mac OS Server Admin.
2. Click Users & Groups and choose Show Users & Groups List.
3. Select the users or groups in the list that you want to export. If you select a group, the individual users in the group are exported. Guest attributes can't be exported.
4. Click Users & Groups and choose Export Selected Items.
5. Save the exported file on the ASIP server.

Step 4: Mount the ASIP server on Mac OS X Server

To mount the ASIP server:

1. On the ASIP server, disconnect all users and administrators and shut down the mail server.
2. On Mac OS X Server, log in as an administrator and turn off all services using Server Admin.
3. Choose Go > Connect to Server.
4. Enter the IP address or DNS name of the ASIP server, then click Connect.
5. Log in to the ASIP server as an administrator, then mount the startup volume for the ASIP server.

Step 5: Set up the home directory infrastructure

Set up the destination for home directories you want to restore.

For detailed instructions on how to perform individual steps in the following procedure, see the user management guide.

To prepare the server to store home directories:

1. Create the folder you want to serve as the home directory share point, if required. You can use the predefined /Users folder, if you like.
2. Open Workgroup Manager on the server where you want the home directories to reside.
3. Click Sharing to set up a share point for the home directories.

   If the user accounts will reside in a shared Open Directory directory, create a dynamically automounted AFP or NFS share point for the home directories. Make sure the share point is published in the directory where the user accounts that depend on it will reside.
4. If you'll import user and group accounts from an XML file using Workgroup Manager, optionally set up a preset. When you import users, you identify the preset, and the users inherit settings associated with the preset.

   In Workgroup Manager on the computer from which you'll import users, click Accounts then open the directory into which you'll import users.

   Define the preset. You can specify default home directory settings for users, password validation settings, mail settings, and so forth.

Step 6: Copy the Users & Groups Data File and the mail database

To copy these items:

1. Navigate to the Users & Groups Data File on the remote ASIP server. Its default location is the Preferences folder in the System Folder.
2. Make a copy of the Users & Groups Data File.
3. From the version 10.3 server, move the copy of the Users & Groups Data File to a local partition on the version 10.3 server.
4. Navigate to the AppleShare IP Mail 6.0 Data file and copy it to the same local partition.

Step 7: Run the AppleShare IP Migration utility or use Workgroup Manager to import users and groups

If you're migrating Macintosh Manager or want to import users into a shared directory, use Workgroup Manager to import the users. The AppleShare IP Migration utility imports users only into the local directory.

To use the AppleShare IP Migration utility:

1. Open the AppleShare IP Migration utility. It's located in /Applications/Utilities.
2. Click the lock in the lower-left corner to authenticate as an administrator.
3. Select migration options.

   Note: You can't migrate share points and privileges when migrating remotely.

   Select the option that creates local home directories for the users you're migrating. The users are migrated to the local directory on the server where you're running the migration utility.

   You can migrate users and groups without migrating the mail database, but you can't migrate the mail database without migrating users and groups.

   When migrating users and groups, the migration utility checks to see if a duplicate user exists in a parent domain on a different computer. To determine what happens when a duplicate user name occurs, choose an option:

   - **Don't migrate the AppleShare user:** The ASIP data is reassigned to the administrator and the mail inbox is converted to a text file. (Choose this option if you're migrating a primary server.)
   - **Migrate the AppleShare user's privileges and mail:** The ASIP data is assigned to the existing user in the parent domain and the ASIP mail is made available to this user. (Choose this option if you're migrating a secondary server.)

   Note: If a duplicate group exists in a parent domain on another computer, the membership of this group is not updated.

4. Click Migrate.
5. Locate the file Users & Groups Data File and click Choose. (The default location is the Preferences folder in the System Folder.)

6. If you're migrating the mail database, locate the file AppleShare IP Mail 6.0 Data and click Choose.
7. During migration, the utility displays a progress bar and status information. When migration is complete, click Quit.
8. Examine the log files, which are located in /Library/Logs/Migration/:
   - **UserGroupsActions.log:** Steps taken during user and group migration.
   - **UserGroupsExceptions.log:** Steps taken or not taken during user and group migration that may require additional administrative attention. For example, the log records duplicate users detected and the assignment of data to the administrator or to an existing user.
   - **PrivilegesActions.log:** Steps taken during privileges migration.
   - **PrivilegesExceptions.log:** Steps taken or not taken during privileges migration that may require additional administrative attention.
   - **MailActions.log:** Steps taken during mail migration.
   - **MailExceptions.log:** Steps taken or not taken during mail migration that may require additional administrative attention.
9. In Workgroup Manager, change home directory settings from local to network for all migrated users.
10. Using Workgroup Manager, examine a sample of users and groups to see if the settings were migrated correctly.

    Also examine a sample of share points and privileges to make sure any settings you migrated were migrated correctly.
11. Examine a sample of migrated mail accounts.

To import users and groups using Workgroup Manager:

1. In Workgroup Manager, click the Accounts button.
2. Click the globe icon in the toolbar to open the directory into which you want to import accounts.
3. Click the lock to authenticate as domain administrator.
4. Choose Server > Import, select the export file you created on the ASIP server in step 3, and specify import options.

   If you're importing user accounts and using a preset, make sure you identify the preset. If you want imported users to have passwords validated using Open Directory authentication, you can set that up in the preset. Enable the password option that forces users to change their passwords the next time they log in.

   You can also change password settings using Workgroup Manager after you've finished importing users.
5. Click Import.

You can also use the dsimport tool to import users and groups. See the command-line administration guide for dsimport instructions.

To create home directories for imported users:
You have several options:

- Create home directories one at a time by selecting a user account in Workgroup Manager, clicking Advanced, then clicking Create Home Now.
- Create all the home directories by using the -a argument of the createhomedir command. For details, see the command-line administration guide or the man page for createhomedir.
- A home directory associated with an AFP share point is automatically created the first time a user logs in if it doesn't exist already.

Step 8: Copy data to the new server

Copy data you want to reuse from the remote ASIP server to Mac OS X Server.

Web Content

Copy static webpages to /Library/Webserver/Documents/.

For dynamic content, consider recoding your existing CGIs using the native Mac OS X Server web server capabilities. You can also run AFIP CGIs based on AppleScript, and it is no longer necessary to have the Classic environment available to run them; run the ACGI Enabler (in /Applications/Utilities/) to set up Apache support for these legacy CGIs.

FTP Configuration Files

To migrate your FTP settings, copy configuration files to the Mac OS X Server directory indicated:

In this directory	Place these files
/Library/FTPServer/Configuration	ftpaccess ftpconversions ftphosts ftpgroups ftpusers
/Library/FTPServer/Messages	banner.txt welcome.txt limit.txt

User Data

Place home directories in locations that match the locations in the imported user records. If necessary, you can use Workgroup Manager to edit user accounts so the locations in the account and on disk are the same.

Instructions for restoring Macintosh Manager data are in step 10.

Step 9: Set up share points and privileges

Re-create the share points and privileges as required. Remember that a group can't own a folder in Mac OS X Server.

To create a share point and set privileges:

1. Open Workgroup Manager and click Sharing.
2. Click the All tab and select the volume or folder you want to share.
3. Click the General tab and select "Share this item and its contents."
4. Change the owner and group of the shared item by typing names or dragging them from the drawer accessible by clicking the Users & Groups button.
5. Use the pop-up menus to change the privileges for the Owner, Group, and Everyone.
6. Click the Copy button to apply the ownership and privileges to all items within the share point if you want to override privileges that other users may have set.
7. Click Save.

New share points are automatically shared using AFP, SMB, and FTP, but not NFS. To export a share point using NFS, use the Protocol pane.

Step 10: Migrate Macintosh Manager Information

To migrate Macintosh Manager data:

1. Open the Macintosh Manager 1.x administration application and log in to the ASIP server using an administrator account. After connecting, verify the users and workgroups using the option on the File menu. After the consistency check is complete, quit the application.

   Note: User accounts that exist only in Macintosh Manager and not in ASIP's Users & Groups list won't be migrated. These users will appear in the migration log file, as described later in this procedure.

2. Set up a remote Macintosh Manager administrator computer by installing Macintosh Manager administrator and client software from the Administration Tools disc onto a Mac OS 9.2 computer.

   The computer should have access to the same printers and applications you want to use for your client computers so you can easily create lists of allowed applications and printer lists for the clients. The computer can have access to more printers and applications than its clients, but not fewer.

3. Open the Macintosh Manager administration application on the Mac OS 9.2 computer and connect to the version 10.3 server. Macintosh Manager opens with a default (blank) database. Without making changes, quit the application.

   This step ensures that the application automatically looks for the 10.3 server the next time it's opened.

4 Open Server Admin on the version 10.3 server and make sure that Macintosh Manager and AFP services are not running. This step is very important to the success of user document migration.

5 In the Macintosh Manager share point (/Library/Macintosh Manager/), create a new folder called Old MM Items:

/Library/Macintosh Manager/Old MM Items/

6 Copy the contents of the Macintosh Manager share point from the ASIP server to the Macintosh Manager share point on the version 10.3 server.

Place the Users folder just under the Macintosh Manager share point:

/Library/Macintosh Manager/Users/

Place any of the following folders in the following table into:

/Library/Macintosh Manager/Old MM Items/

For	Move this folder to Old MM Items
Macintosh Manager 1.0-1.0.x	Macintosh Manager Items
Macintosh Manager 1.1-1.x	Multi-User Items (Copy to the ASIP Server Desktop before copying to the version 10.3 server.)
At Ease for Workgroups 5.0	At Ease Items WG 5.0

7 Open the Terminal application and execute the following command:

```
sudo chown -R mmuser:admin /Library/Macintosh\ Manager
    /Old\ MM\ Items/
```

You can also use quotation marks to handle the spaces in the folder names:

```
sudo chown -R mmuser:admin "/Library/Macintosh Manager/Old MM Items/"
```

8 In Server Admin, start AFP and enable Macintosh Manager.

To start AFP, select it in the Computers & Services list and click Start Service.

To enable Macintosh Manager, select the server name in the Computers & Services list, click Settings, click Advanced, and select Enable Macintosh Manager.

9 Make sure you have enough disk space on the home directory volume for user documents and settings.

Estimate the number of megabytes of data in the Macintosh Manager User folders. Note the size of the Users folder. Subtract from it the size of the Groups folder inside the Users folder. If you used multiple workgroup storage volumes, combine results from all of them.

10 The server and each client computer have script settings that designate the primary language for each computer. Make sure that these three language script settings match:
   - The default script for logging in and using the Macintosh Manager 2.2 administration program. For Mac OS X Server, use the International pane of System Preferences to change this setting. On Mac OS 9, the script setting is determined by the localization of the current system.
   - The script setting for the old Macintosh Manager or At Ease for Workgroups database, determined by the localization of the system the database was created on.
   - The script setting in the "Encoding for older clients" pop-up menu in settings for Apple file service in Server Admin on the version 10.3 server. Don't change this setting after migration.

11 Make sure all the user home directories exist. Use Workgroup Manager or the createhomedir tool to create them.

12 On the remote Macintosh Manager 2.2 administrator computer, open the Macintosh Manager 2.2 administration application. Once the correct server is found by Macintosh Manager, log in as an administrator.

   Note: Allow the application to locate the server on its own. If the server can't be found or another server is selected by default, quit the application, move the Old MM Items folder to the Desktop, and go back to the first step in this procedure.

13 Click Yes when asked whether you want to convert previous Macintosh Manager settings.

14 Choose a password creation option.

   "Use a randomly generated password" creates a unique password for each user. The password appears in the log file.

   "Use this password" lets you specify one password for all users.

15 Click Update. The migration utility starts migrating data, displaying a progress bar during the process.

   If two user documents with identical file names are found on separate volumes, both documents are copied to the home directory and the name of one of the documents is modified.

   if two sets of user settings are stored on separate volumes, the settings with the most recent data are copied to the home directory.

When the migration utility finds a managed client user already exists in a Mac OS X Server directory, the action it takes depends on the user login setting and whether the user has a home directory:

If login is	The migration utility
Enabled	Assumes it is the same user and copies the user documents to the home directory. If the user account resides in a shared Open Directory directory on a different server, user documents are copied to the home directory if the volume with the home directory can be mounted.
Disabled	Enables login for the user, sets a password, and copies user documents to the home directory.

16 Quit the Macintosh Manager administration application after migration is complete so that information is written to the Macintosh Manager database.

17 Check the log file after migration is complete. It's called MM Migration Log.txt. The file resides at the root of the startup volume on the Mac OS 9 computer.

Use the log file to determine whether you need to:

- Set a password for a user
- Create a home directory for a user
- Clean up documents for a user when more than one workgroup volume document was copied to a home directory
- Check to see whether any user documents were not copied

18 Move the Preferences folders in Mac OS 9 user home directories from ~/Library/Preferences to ~/Library/Classic/Preferences if you want to preserve existing preferences. If you don't move the Preferences folder, users can log in, but all application preferences are new, not reused.

Step 11: Test the new server

To test the new server:

1 Open Workgroup Manager and inspect user and group accounts.

2 Open Server Admin and inspect settings for services whose configuration data you migrated.

3 Check Macintosh Manager and Workgroup Manager settings for managed Mac OS 9 clients you migrated. Log in to managed client computers to make sure that settings work as expected.